

# ENABLING E-LEARNING PROFESSIONAL DEVELOPMENT THROUGH A BLENDED COMMUNITY OF ONLINE PRACTICE

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# Contents

Contents .....	i
Table of Figures .....	iv
Table of Tables .....	ix
Table of Appendices .....	x
Acknowledgements .....	xi
Abstract .....	xii
Chapter 1 Introduction .....	1
1.1 The problem .....	1
1.2 Research goal and questions .....	2
1.3 Methodology .....	2
1.4 Researcher roles and research context .....	3
1.5 Research scope and key terms .....	4
1.6 Value and importance .....	5
1.7 Thesis structure .....	5
Chapter 2 Literature .....	7
2.1 Literature on professional development .....	7
2.1.1 Professional development for adult literacy educators .....	7
2.1.2 E-learning professional development for educators .....	10
2.1.3 Gaps in the professional development research literature .....	17
2.2 The theory of legitimate peripheral participation within a community of practice .....	18
2.2.1 The theory has evolved .....	18
2.2.2 In the beginning .....	19
2.2.3 A different perspective .....	21
2.2.4 A different direction .....	23
2.2.5 Reflecting and looking forward .....	24
2.3 Literature on the application of CoP or LPP theory .....	26
2.3.1 Communities of practice online .....	28
2.3.2 Cases .....	30
2.3.3 The gaps reported in the literature .....	36
2.4 Summary .....	36
Chapter 3 Methodology .....	38

3.1 Why design-based research? .....	38
3.2 The phases of the research process .....	40
3.2.1 Phase One: Exploration - Analysis and initial design .....	43
3.2.2 Phase Two: Enactment - Redesign and further development .....	43
3.2.3 Phase Three: Evaluation .....	44
3.2.4 Publication .....	45
3.3 The multiple roles of the researcher .....	46
3.4 Research participants .....	47
3.5 Research Methods .....	49
3.5.1 Interviews .....	49
3.5.2 Data from the online environment .....	51
3.5.3 Design narrative .....	52
3.6 Data Analysis .....	53
3.6.1 Phase One data analysis .....	53
3.6.2 Phase Two and Three data analysis .....	54
3.7 Ethical Considerations .....	55
3.7.1 Participant safety .....	55
3.7.2 Voluntary participation .....	55
3.7.3 Confidentiality and anonymity .....	55
3.8 Validity and reliability .....	56
3.9 Limitations of the study .....	58
Chapter 4 Phase One and Phase Two meso-cycle one: Community resource and communication focus .....	59
4.1 Phase One: Exploration - design and implementation .....	59
4.1.1 Overview .....	59
4.1.2 Site development .....	61
4.1.3 Site Design .....	65
4.1.4 Participant Engagement .....	73
4.1.5 Connections .....	84
4.1.6 Site potential .....	86
4.2 Phase Two, meso-cycle one: Enactment - redesign and implementation .....	87
4.2.1 Overview .....	87
4.2.2 Participant engagement .....	96
4.2.3 Infrastructure .....	104

4.2.4 Key elements .....	104
Chapter 5 Phase Two meso-cycle two and Phase Three: Online classroom focus .....	114
5.1 Preparation: Enabling and supporting tutors in developing their online classrooms .....	114
5.1.1 Demonstration classrooms .....	115
5.1.2 Colleague role .....	123
5.2 Phase Two meso-cycle two and Phase Three: Online classroom developments for the At-Base tutors.....	123
5.2.1 “Annie’s Classroom” .....	125
5.2.2 “George’s Classroom” .....	136
5.2.3 “Belinda’s Classroom” .....	142
5.3 Phase Three: Online classroom developments for all other tutors .....	148
5.3.1 “Ken’s Classroom” .....	148
5.3.2 “Mary’s Classroom” .....	150
5.3.3 “Norma’s Classroom” .....	152
5.3.4 “Nationwide Clients” .....	153
Chapter 6 Earthquakes.....	155
Chapter 7 Withdrawing from the field of study .....	161
Chapter 8 Theoretical findings.....	164
8.1 Supporting the development of a blended community of online practice .....	165
8.1.1 Developing a matrix of strategies .....	166
8.1.2 The Environment.....	170
8.1.3 The Engagement .....	174
8.1.4 The Stakeholders.....	179
8.2 Legitimate Peripheral Participation within the ALEC online environment .....	183
8.2.1 The Environment.....	186
8.2.2 The Engagement .....	191
8.2.3 The Stakeholders.....	198
8.3 Applying the instruments to support professional development in e-learning .....	207
Chapter 9: Conclusions .....	210
9.1 Answering the research questions.....	210
9.2 The significance of the research, its value and contribution .....	212
9.3 Limitations and future research.....	214
9.4 Conclusion.....	214
References.....	216



Appendices .....	228
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## Table of Figures

Figure 1: Generic model for conducting design research in education. From “Conducting educational design research.” by S. McKenney and T. Reeves, 2012, p. 77. Copyright 2012 by Susan McKenney and Thomas C. Reeves. Reprinted with permission.....	41
Figure 2: Micro-, meso-, and macro-cycles in educational design research. From “Conducting educational design research.” by S. McKenney and T. Reeves, 2012, p. 78. Copyright 2012 by Susan McKenney and Thomas C. Reeves. Reprinted with permission. ....	41
Figure 3: The macro-cycle of this design-based research showing the three phases, involving four meso-cycles and ten micro-cycles .....	42
Figure 4: Timeline, main activities and methods used for each meso-cycle of the research process .	42
Figure 5: ALEC Moodle Sitemap (May 2010) showing the site, the categories, the courses and the sections within each course.....	63
Figure 6: ALEC Moodle Sitemap (October 2010) showing the new categories within the site, and the changed sections within each course.....	66
Figure 7: Main Page - Tutors Only area (June 2010) showing the navigation buttons and supporting text in the centre, as well as the navigation block on the left.....	67
Figure 8: Main Page - Tutors Only area (September 2010) showing the simplified page with the Writers’ space added to the navigation block .....	68
Figure 9: Writers’ Space (October 2010) showing the tools provided for collaboration.....	69
Figure 10: Participant logins each week during Phase One, with a trendline showing the increase in logins .....	70
Figure 11: Overview of participant use of the online environment during Phase One, showing the mean number of hits per week and the number of weeks when the participants accessed the Moodle site .....	71
Figure 12: Site hits in Phase One (showing participants grouped by their work focus) and major site developments in Phase One .....	72
Figure 13: Participant 'Active' participation in the online environment during Phase One, showing the mean number of hits per week and the number of weeks when the participants ‘actively’ accessed the Moodle site, and indicating those tutors considered to be lurkers .....	77
Figure 14: Forum activity, views and posts, in all forums during Phase One, with a trendline indicating the increase in activity .....	81

Figure 15: Comparison of manager and tutor activity, views and posts, in the General Discussion forum during Phase One .....	82
Figures 16a, b & c: Network diagrams for each forum showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines .....	83
Figure 17: Participant logins during Phase Two, meso-cycle one with a trend line indicating an increase .....	92
Figure 18: Participant logins during Phase One and Phase Two, meso-cycle one showing the cycle of gradually increasing activity in term time and decreasing activity during holidays .....	92
Figure 19: Total activity in 'Tutors Only' showing the holiday/term time cycle and major events, displayed alongside a timeline of Phase Two, meso-cycle one major redesign events .....	94
Figure 20: All 'Tutors Only' activity by grouped by participants' work focus, showing the major events and the holiday/term time cycle .....	95
Figure 21: 'Tutors Only' participant hits by activity type, active or passive, during Phase Two meso-cycle one.....	97
Figure 22: Number of 'active' participant hits per week and the number of weeks when the participant accessed the site during Phase Two meso-cycle one .....	98
Figure 23: Network diagram for the Resources Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines .....	100
Figure 24: Network diagram for the News and Notices Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines .....	101
Figure 25: Network diagram for the General Discussion Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines .....	101
Figure 26: Network diagram for the Staffroom Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines .....	102
Figure 27: Activity, posts and views, in all Tutors Only forums during Phase Two meso-cycle one, showing total activity and the holiday/term time cycle .....	103
Figure 28: Tutors Only How to... (June 2011) showing the standardised format with the Tutors Only navigation block on the top left and the 'My Courses' block on the bottom left. The 'Course Menu' can be seen between them, and the first section of the space is visible. ....	106

Figure 29: Tutors Only, Main Page (June 2011) showing standardised format with the Tutors Only navigation block on the top left and the 'My Courses' block on the bottom left. The link to the Research Space can be seen between them. On the right is the calendar and its associated upcoming events display.....	107
Figure 30: Resources - Tutors Only area (June 2011) front page, showing the simplified structure in the 'Course Menu' on the left .....	108
Figure 31: Timeline of online classroom developments by all tutors participating in Phase Two meso-cycle two and Phase Three, February 2011 to July 2012 .....	115
Figure 32: Timeline of developer's implementation of support for online classroom tutors, March 2011 to July 2012 .....	115
Figure 33: Susan's Educational Design Classroom, displaying the 'Welcome' page and showing the topic focussed design in the section headings in the 'Course Menu' on the left, May 2011 .....	116
Figure 34: Susan's Educational Design Classroom, displaying the 'Planning and Building your Classroom' section, May 2011. Other section headings can be seen in the Course Menu on the left .....	117
Figure 35: Susan's Demo One – displaying the 'Welcome' page and showing a subject focussed design in the section headings in the Course Menu on the left side, March 2011.....	118
Figure 36: Susan's Demo One, displaying section 'Numeracy', showing the progress bar under the Course Menu on the left, March 2011 .....	119
Figure 37: Susan's Demo Two, displaying the 'Welcome' page and showing the student focussed design in the section headings in the Course Menu on the left, March 2011 .....	120
Figure 38: Susan's Demo Two, displaying section 'Anne' showing some of the activities for a single student, March 2011.....	120
Figure 39: Susan's Demo Two, displaying section 'Group A work' showing some of the activities for a group of students, and showing the group focussed design in the section headings in the Course Menu on the left, September 2011 .....	121
Figure 40: Tutor hits on all demonstration classrooms from June 2011 - July 2012 for all staff with online classroom access, showing the number of hits per week per staff member. (The more central the marker, the greater the number of hits by that person in that week) .....	122
Figure 41: Timeline of online classroom developments by At-Base tutors participating in Phase Two meso-cycle two and Phase Three, February 2011 to July 2012.....	124
Figure 42: Tutor hits on Annie's Classroom June 2011 - July 2012 by all staff with online classroom access, showing the number of hits per week per staff member to a maximum of 500 hits. (The more central the marker, the greater the number of hits by that person in that week).....	126

Figure 43: Annie's Classroom, displaying the Welcome page, showing the sections for each student in the course menu on the left, the calendar on the right and the news post and forums in the centre (June 2011). (Students' names have been blurred to provide anonymity) .....	127
Figure 44: Annie's Classroom news post congratulating her students on their good scores in a game, 2/6/11.....	128
Figure 45: Annie's Classroom news post providing information about ALEC's situation following the third major earthquake, 13/6/11 .....	128
Figure 46: Annie's Classroom news post giving the students their programme of work to be completed while she was absent due to ill health, 2/10/11. (Students' names have been blurred to provide anonymity) .....	129
Figure 47: Annie's Welcome page displaying the new winter theme and showing the "Good Sites and Reviews" forum added in the centre, July 2012. (Students' names have been blurred to provide anonymity) .....	130
Figure 48: Annie's Classroom Resources section displaying the resources for all students, June 2011 .....	131
Figure 49: Annie's Classroom Resources section displaying the resources for all students, July 2012 .....	131
Figure 50: Peta's Place – An example student section in Annie's Classroom displaying resources and activities for a single student, June 2011. (Peta is a pseudonym provided for a student) .....	132
Figure 51: Peta's Place – An example student section in Annie's classroom displaying resources and activities for a single student. The student's view of the page is displayed on the right, the teacher's view is on the left showing in grey lettering all the content which is hidden from the student, June 2012. (Peta is a pseudonym provided for a student).....	134
Figure 52: Tutor hits on George's Classroom June 2011 - July 2012 by all staff with online classroom access, showing the number of hits per week per staff member to a maximum of 500 hits. (The more central the marker, the greater the number of hits by that person in that week) .....	138
Figure 53: George's Classroom, displaying the Welcome page, showing the sections for each student in the course menu on the left, the calendar on the right and the news post in the centre (July 2012) .....	139
Figure 54: Ethan's Site - A student section in George's Classroom, displaying resources and activities for a single student, July 2011. (Ethan is a pseudonym provided for a student) .....	141
Figure 55: Ethan's Site - A student section in George's Classroom, displaying resources and activities for a single student, June 2012. (Ethan is a pseudonym provided for a student) .....	141

Figure 56: Tutor hits on Belinda's Classroom June 2011 - July 2012 by all staff with online classroom access, showing the number of hits per week per staff member. (The more central the marker, the greater the number of hits by that person in that week) .....	144
Figure 57: Belinda's Classroom, displaying the Welcome page and showing the sections for each student in the course menu on the left, the calendar on the right and the news posts in the centre, (July 2012) .....	145
Figure 58: Catherine - A student section in Belinda's Classroom, displaying resources and activities for a single student, October 2011. (Catherine is a pseudonym provided for a student) .....	146
Figure 59: Catherine - A student section in Belinda's Classroom, displaying resources and activities for a single student, July 2012. (Catherine is a pseudonym provided for a student) .....	147
Figure 60: Timeline of online classroom developments by Community and Workplace tutors participating in Phase Two meso-cycle two and Phase Three, April 2011 to July 2012 .....	148
Figure 61: Ken's Classroom, displaying the Test section and practice content, July 2012 .....	149
Figure 62: Post about online classrooms by Mary, in the General Discussion forum, September 2011 .....	150
Figure 63: Mary's Classroom, displaying the Reading section and practice content, February 2012 .....	150
Figure 64: Norma's Classroom, displaying the Welcome page and showing other section headings in the Course Menu on the left, July 2012 .....	152
Figure 65: NationWide Clients classroom, displaying the Welcome page and showing other section headings in the Course Menu on the left, July 2012.....	153
Figure 66: Maximum magnitude earthquake each week and number of earthquakes each week magnitude 3 or greater experienced by the participants and the researcher, shown in relation to the phases of this research .....	156
Figure 67: Forum post in the News and Notices forum by the developer, 22 Feb 2011 .....	158
Figure 68: Final post by developer in the News and Notices forum, July 2012 .....	163
Figure 69: Instrument 1: A matrix of strategies for enabling and supporting the development of a blended community of online practice (BCoOP). The vertical dimension indicates the stage during which the strategy is initiated; the horizontal dimension indicates the component which is being developed by the strategy. This matrix is relevant to single organisations with distributed membership .....	169
Figure 70: Instrument 2: A heuristic model to guide the investigation of the characteristics of legitimate peripheral participation within the online aspect of a BCoOP. The three components of a CoP, containing the twelve characteristics of LPP, are presented as layers connected by the spindle of their shared context .....	184

Figure 71: An overview of the stakeholders in the ALEC BCoOP during Phase Three of the research. Tutors are shown within their teams, with the team leaders underlined .....	185
Figure 72: The tasks of the online practice of the ALEC BCoOP aligned to three learning trajectories, and indicating the increasing level of intentionality, effort and risk involved, and the movement from the periphery of practice required for completion of the task .....	193
Figure 73: A range of members' trajectories through the tasks of the online practice of the ALEC BCoOP. The markers indicate the member's first independent completion of a particular task. The dotted path is the proposed path of a 'typical' community member progressing gradually through the tasks .....	195
Figure 74: ALEC BCoOP members' participation compared as scaled circles, representing the number of times members participated in the tasks of the online practice. The colour gradations within the circles indicate the percentage of peripheral, inbound or insider tasks .....	197
Figure 75: Centripetal movement through learning trajectories showing three opportunities for identity development (Trajectory terms are from Wenger (1998b)) .....	202
Figure 76: The peripherality of the ALEC staff members, indicated by the centrality of their position. The most central tutors are those with an insider trajectory and the fullest participation in the online practice. (Members of the ALEC BCoOP are shown within their teams, with the team leaders underlined .....	204

## Table of Tables

Table 1: Overview of the data collected across all phases of the research and all participants. (Participant names are pseudonyms) .....	48
Table 2: Overview of data gathered from the online environment which informed the research. (The shaded areas indicated the data which was collected.) .....	51
Table 3: Phase One participants' pseudonym, role and workplace .....	61
Table 4: Draft design principles synthesised from the initial literature review and consultation with the research participants .....	62
Table 5: Phase One support given and support documents provided on the Moodle site .....	74
Table 6: Phase Two research participants' pseudonym, role and workplace .....	88
Table 7: Re-drafted design principles synthesised from the literature review and further consultation with the research participants .....	90
Table 8: Grouping the Dimensions, Elements and Criteria to illustrate the distillation of the horizontal dimension components of the matrix of strategies .....	168

# Table of Appendices

Appendix A: Moodle and ALEC Moodle site terminology.....	228
Appendix B: Phase One coding template.....	229
Appendix C: Phase Three coding template.....	232
Appendix D: Ethical approval Phase One.....	236
Appendix E: Ethical approval Phase Two meso-cycle one .....	237
Appendix F: Ethical approval Phase Two meso-cycle two and Phase Three.....	238
<a href="#">Appendix G: The 'First Class' resource folder system.....</a>	239
Appendix H: Support documentation example.....	241
Appendix I: The incorporation of elements of Stuckey's (2004) framework into the matrix of strategies.....	242

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## Abstract

Communities of practice that occur naturally within an organisation enable the members to learn through participation in practice together (Lave & Wenger, 1991). However, when a community lacks expertise in 21<sup>st</sup> century practices, learning these skills through shared practice becomes difficult. E-learning is often marketed as if the tools were easy to adopt and adapt, but effective professional development is required to support educators in learning to employ e-learning tools in their practice. Research shows that effective professional development is timely, relevant, flexible, and often collaborative in nature with examples of good practice. The research presented in this thesis describes the design and implementation of professional development which supports a community of practitioners in building the expertise to incorporate e-learning within its professional practice. The research was informed by a comprehensive review of literature on professional development, with a focus on the area of e-learning, the theory behind the communities of practice concept, and the application of that theory. A design-based methodology was employed to gather data from a range of sources of evidence, over two years, in four iterative cycles of collaborative design, implementation, evaluation and redesign. The context in which the research took place was a small educational organisation with an average of twenty staff members over the duration of the study. This staged implementation of an online environment, designed in collaboration with the community, supported the development of a blended community of online practice and provided timely, relevant professional development in e-learning. Analysis of the research findings produced two instruments: (1) a matrix of strategies for enabling and supporting the development of a blended community of online practice, and (2) a heuristic model to guide the investigation of the learning taking place within the online aspect of a blended community of online practice. These instruments are recommended to designers, developers or researchers supporting the development of a blended community of online practice and the professional development taking place in its online environment.

# Chapter 1 Introduction

There is a growing expectation that educators will teach in ways that prepare their learners for a productive role in the increasingly digital world in which they live. For many educators the use of an online environment and e-learning tools requires them to teach in ways which they have not had the opportunity to learn themselves, so how do the educators learn these digital skills? Traditional formal models of professional development for educators, disconnected from their everyday practice, can be inadequate for the needs of today's educators. Both e-learning and the professional development needs of educators are constantly changing and there is no stand alone 'one size fits all' professional development solution (Davis, Fletcher, Brooker, et al., 2010; Guiney, 2013; Shephard, et al., 2008). This first chapter of the thesis introduces the professional development problem for which this study provides a solution. The research questions and the methodology are introduced, along with the context and scope of the research, and the researcher's roles within it. The value and importance of the research is outlined, and the chapter concludes with an overview of the structure of the thesis.

## 1.1 The problem

Tools and environments for e-learning have become more easily accessible to twenty first century educational organisations. The benefits of these tools can be realised when educators are able to incorporate them successfully into their teaching programme. A problem arises when the provision of e-learning tools and environments is not accompanied by effective professional development for educators in using and adopting them within their professional practice. While larger organisations often have the resources to provide support for their staff in developing these skills, some organisations, particularly smaller ones, lack the capacity within their organisation to provide any professional development. For an adult literacy organisation this situation can be compounded by the nature of the educators' employment, with time constraints, distance, and financial constraints as barriers to adult literacy educators acquiring and developing new skills and knowledge (Mackay, Burgoyne, Warwick, & Cipollone, 2006; C. Smith & Gillespie, 2007). This thesis presents one solution to this problem; a means by which a small educational organisation can support the development of capacity within their existing membership, to incorporate an online environment and e-learning tools within their professional practice.

Professional development for e-learning, which has been seen to affect teacher learning, is relevant, practical, and enables teachers to use new technologies in practice within their individual contexts. This type of learning activity can take place over an extended period of time, through the collegiality and collaboration engendered within a practitioner community (Garet, Porter, Desimone, Birman, & Yoon, 2001; Lawless & Pellegrino, 2007). In naturally occurring communities of practice the members can learn from each other (Lave & Wenger, 1991), but this approach is problematic when there is no expertise within a community in using e-learning tools. How can members learn from others within their community if none of the members have yet mastered the new practice? The adult literacy organisation which formed the context for this research had acquired the open source technology to develop an online environment, but the members of its existing community of practice did not have the skills to use this e-learning tool, nor the expertise to incorporate it within their professional practice.

## 1.2 Research goal and questions

The goal of this research was to develop and research timely, relevant, effective professional development, through the online environment of a small organisation, which could support the members of its community of practice in incorporating e-learning within their practice. The research questions became more focussed as the research progressed, and the adult literacy organisation's online environment was designed to become the vehicle through which the research goals were achieved. The overarching question was, "How can an online environment for adult literacy educators support the development of e-learning for their learners?" Answering this question required the design and development of the online environment, and investigation of the ways in which it could support the learning of the community members.

Three guiding questions helped to focus the research:

- How can an online environment be designed and implemented to support adult literacy educators' professional development in the area of e-learning?
- What hinders the use of this online environment in supporting adult literacy educators in the development of e-learning for their learners?
- What conditions or strategies support the design and implementation of this online environment as a source of professional development in e-learning?

The practical nature of these questions, and the decision to design and develop the online environment to investigate the answers, was reflected in the choice of an appropriate methodology for this research; design-based research.

## 1.3 Methodology

In investigating a practical solution to the problem presented, this research fits within a pragmatic paradigm. The contextual focus of this pragmatic approach encourages the uncovering of practical solutions, but this research also aims to achieve "the explication of theoretical insights that though contextually grounded, can be extrapolated and modified for effective use in ever more diverse contexts" (Anderson, 2005, Stages of DBR para. 8).

Design-based research, sometimes called educational design research, implements theory inspired innovations in real world contexts, to both enrich the local context and provide the design principles and guidance which enable generalisation to take place. Design-based research "is interventionist because it is undertaken to make a change in a particular educational context" (McKenney & Reeves, 2013, p.134). As it is in this study, these educational innovations are often called interventions. Design-based research requires "a pragmatic epistemology that regards learning theory as being collaboratively shaped by researchers and practitioners" (Reeves, 2000, p.12), and it sits comfortably alongside social constructivist theories such as Lave and Wenger's (1991) legitimate peripheral participation. Through the design-based research approach the researcher worked collaboratively with community members in developing the intervention. This facilitated a better understanding of this specific context, the practice which took place within it, and the outcomes provided by the research.

The intervention in this study is composed of the collaborative design and staged implementation of the online environment developed to support the community in building the capacity to provide ongoing professional development for e-learning. The intervention and the research took place through a phased approach, to facilitate a gradual increase in the educators' skills while encouraging them to engage more in the e-learning practice. The phases of the research, which fit McKenney and Reeves' (2012) generic model for design-based research, contained iterative cycles of collaborative design, implementation, evaluation and redesign, so that the online environment was developed to fit this specific community context. The research took place over a period of two years through four phases: one of Exploration, two of Enactment and one of Evaluation. Design-based research combines collaborative design and development, along with observation and evaluation, which helped to create a rich description of the intervention and the context in which it was implemented.

A range of research methods was utilised to gather data. The online environment itself provided multiple sources of data both quantitative, in the form of the site activity logs and survey response choices, and qualitative, in the form of forum posts and written survey responses. Other qualitative data was gathered to both increase the accuracy of the interpretation of quantitative data and to provide the rich description which provides an accurate picture of this context. This data came from interviews that were conducted during each phase of the research, and from the design narrative journal which the researcher kept in her role as the designer. This combination of qualitative and quantitative data helped to increase the credibility of the research.

Because of its design-based nature, this research benefited the community in this context through the development and implementation of the intervention, and also generated the design principles and evaluation which will enable the research to be of use to designers of online environments for communities, and developers and researchers in other informal professional development contexts.

## 1.4 Researcher roles and research context

The researcher undertook multiple roles within the research context. As well as the expected role of researcher, she also undertook roles as designer of the online environment, developer of the intervention, provided technical support and an introductory session to the online environment. The researcher's contribution in each of these roles changed as the research progressed through its phases. At all times the researcher strove to maintain a researcher view independent of her other roles, to maintain a balance between the researcher's involvement in the community and the objectivity she required for observation.

The context of the research study was an Adult Literacy Education Centre in New Zealand, known in this research as ALEC. ALEC had recently acquired an online environment, in the form of a Moodle learning management system, because management wanted the tutors to use it as an e-learning element in their professional practice. This small organisation had an average of twenty staff members consisting of management, administration, and tutors who worked in a variety of teaching situations: most were employed part-time. While some tutors worked with a variety of people with low literacy abilities in a classroom setting, others worked with community based groups in local centres, or employees in their organisation's workplace. Within their existing community of practice there was a willingness to learn from each other, but their opportunities for interaction were limited by the circumstances of their employment. The part-time, peripatetic nature of the tutors' work,

which took place in halls, offices and various workplaces distributed across the city, limited their opportunities for engaging with each other. The tutors were structured into teams, each with its own lead tutor, with some tutors working within more than one team. Each team met four or five times in a teaching term, but the whole organisation only met once or twice in a year.

## 1.5 Research scope and key terms

Several boundaries were set around and within the research to clarify its scope. At its widest, the scope of this research was bounded by the limits of the ALEC community of practice. It did not extend beyond the immediate context to other communities of practice to which ALEC staff might belong. While study in this area may have uncovered other sources of professional development for community members, it would have changed the research focus and made the scope of the study too broad for this thesis.

The development of the ALEC online environment facilitated interaction between the community members. This online environment, the activity within it and the learning taking place through it, were at the heart of this study. As will be described later, the members of this community of practice combined the use of the online environment with their face to face interactions, and ALEC became a blended community of practice. In acknowledging this, reports of face to face community engagement which related to the online environment have been included within the scope of the research.

Boundaries were also set on the scope of the research within the ALEC context, to enable the research to concentrate on the ways in which the online environment was able to support e-learning professional development for ALEC staff. Only the community members' e-learning professional practice within the online environment was included within the scope of this research. The content of the tutors' teaching and the learning taking place for their learners were considered to be outside the scope of the research.

This research was focussed on the ALEC community members' professional development for the use of online e-learning tools through the support of the online environment. While these e-learning tools were only a portion of the tools available, to maintain the online focus, the tutors' use of e-learning outside the online environment was not considered to be within the scope of this study.

The practice of e-learning is defined in the context of this research as

an approach to teaching and learning, representing all or part of the educational model applied, that is based on the use of electronic media and devices as tools for improving access to training, communication and interaction... (Sangrà, Vlachopoulos, & Cabrera, 2012, p.152)

The online environment for e-learning acquired by the ALEC organisation was Moodle; learning management system software which is openly available at no cost. Definitions of the terms used within a Moodle environment, along with the online environment terms developed which were specific to the ALEC Moodle environment, can be found in Appendix A.

## 1.6 Value and importance

Unlike much of the research into learning within communities of practice in an online environment, the community which was the context for this research occurred naturally, rather than being managed or modified. The existing physical community extended its engagement into the online environment, and this research provides one of the first case studies of the development of a blended community of practice. Much of the literature reports on research conducted on e-learning professional development within higher education institutions. The adult literacy organisation which is the context of this research provides a different perspective on an organisation developing an online aspect within its practice. This is a perspective which will be of value to smaller educational organisations, particularly those with fewer resources.

As Duguid (2008) noted, the situated learning theory around communities of practice has been developed in directions different from Lave and Wenger's (1991) original theory of legitimate peripheral participation (LPP). Contrary to much of the research developing community of practice theory through the modification of communities, the research in this thesis returns LPP to its original analytical perspective and extends it to support professional development in a twenty first century context. Underpinned by this situated learning theory, the design-based research presented in this thesis enabled the collaborative development of an online environment which incorporated e-learning tools within the everyday practice of the community. This environment supported the building of capacity within the community to provide timely, relevant e-learning professional development for its members.

This thesis provides a rich description of both the design and development of the online environment, and the process through which it was implemented for the community of practice in this research context. This description will be of value to designers, developers and researchers seeking to enable communities of practice in small organisations to support their members' professional development in e-learning. Through the findings of this research two instruments were developed which will be of further value. The first instrument encapsulates the design principles from this research in a matrix of strategies to support the development of a sustainable blended community of online practice. The second instrument, a heuristic model, provides guidance for the investigation of the learning taking place within a community of practice in an online environment.

## 1.7 Thesis structure

This thesis presents the design-based research that developed and implemented relevant, timely professional development for e-learning, for a community of practitioners in an adult literacy educator centre, and the findings of that research. The second chapter of the thesis contains a review of the relevant literature to provide a background understanding, and as part of the exploratory phase which supported the design decisions made in this research. This literature review begins with an overview of the literature on professional development, with a focus on teacher professional development for e-learning, and the characteristics of effective professional development in this area. The literature suggested that professional development involving a community of practice approach would be most appropriate in the context of this study. A review of the literature on the theoretical background to the communities of practice approach forms the

second section of chapter two. The final section of this chapter reviews literature which considers the practical application of these theories.

The choice of a design-based research approach is discussed in chapter three which goes on to detail the methodology employed in this study, its background and the ways in which it was implemented here. The phases of the research are outlined as are the methods it employed, and the data analyses which took place. This chapter also discusses some of the ethical considerations concerning the research participants, the multiple roles the researcher undertook, as well as issues of validity, reliability and the limitations of this study

Chapters four, five, six and seven present the case at the centre of this study, and describe the phases of the research which took place. Chapter four describes the first two cycles of this design-based research in which the possible solutions for the professional development needs in this context were explored, and the first iteration of the collaboratively developed intervention was implemented. Chapter five describes the following two cycles in which the intervention was refined and then evaluated. The researcher and the participants endured a series of major earthquakes and aftershocks for twenty two of the twenty four months during which research data was gathered. The impact of these unusual events is recorded in chapter six, allowing the rest of the thesis to focus on the more common elements of the context. The final chapter of the case study, chapter seven, describes the researcher's withdrawal from the field of study, and the way in which this was accomplished.

The theoretical understandings drawn from the research are described and discussed in chapter eight. The two sections of this chapter each describe one of the instruments developed through the findings of this research. The first section describes a matrix of strategies which encompasses the design principles for encouraging and supporting the development of a blended community of online practice, clarified by examples drawn from this research context. The second section describes the heuristic model developed to guide investigation of the learning taking place within community of practice based professional development. Supporting examples are again provided from this research context. A third section of this chapter focusses on the process through which these two instruments can be applied to provide relevant, timely professional development for e-learning, through the support of an online environment.

In chapter nine answers to the research questions are discussed and, while acknowledging the limitations of this research, recommendations for future research are provided. The significance and contribution of the research in the areas of professional development, and to the theory and application of a community of practice approach are described. The chapter closes with the final conclusions which draw the thesis to an end.

## Chapter 2 Literature

In this chapter literature on the three major topics relevant to this research is reviewed. The first section of the chapter considers literature on professional development for educators, and provides a background understanding of the forms of professional development made available to them. Of particular interest was professional development which targeted the area of e-learning, recorded instances of high quality, effective professional development, and the ways in which it had been implemented.

A community of practice approach was implemented in this present research and was highlighted in the literature as a particularly successful means of professional development. The second section of this chapter reviews the literature on the theoretical viewpoint associated with the community of practice approach, which is legitimate peripheral participation. The development of this analytical perspective over the twenty years from its initial introduction by Wenger (1990) is discussed. The third section of this chapter considers literature on the application of a community of practice approach to professional development. Literature on communities of practice in a variety of contexts is reviewed. Cases of both successful and unsuccessful communities are reviewed with a particular focus on communities of practice online. Following the identification of gaps in the literature, the chapter ends with a summary.

### 2.1 Literature on professional development

This chapter begins with a focus on the education sector of the participants in this present research, that of adult literacy educators. An understanding of this literature supported the development of context sensitive professional development within this present research. Professional development is considered first in general, then for adult literacy educators and then the more specific area of the use of educational technologies for learning. To ensure a thorough coverage of this topic, literature on professional development (PD) in the areas of teaching with technology or ICT, e-learning, or online learning within other education sectors is reviewed in section 2.1.2. This broader scope considers the importance of this PD and the means through which it has been taking place. Reviewed here are case studies providing examples of four major approaches to e-learning PD: a whole institution approach, fixed term courses, online professional development and a communities of practice approach.

#### 2.1.1 Professional development for adult literacy educators

The literature reports that adult literacy educators (ALE) or teachers of adult basic education (ABE) come from a variety of backgrounds, experience and training, to work with a wide range of learners in a wide range of teaching situations and contexts. In Marceau's (2003) opinion, the value of their work was appreciated most by their learners, and the intrinsic rewards of their profession sustained them in their less than ideal work situations. However, appropriate professional development could provide this disparate group of educators with recognition of their various skills as well as opportunities to improve their practice. Differences between ABE teachers and school teachers were highlighted in Smith and Gillespie's (2007) summary of key research literature. They found that ABE teachers are mostly in part-time employment, may leave the field more often, are often required to teach multiple subject areas, and have scant formal education in teaching adults. These factors,



combined with the variety of background experiences, presented the need for a variety of professional development opportunities.

Professional development (PD) opportunities for ABE teachers also differ in that they are, more often than not, in-service opportunities, most likely short term training and conferences, and that they are not consistently funded by the employer (C. Smith & Gillespie, 2007). Time constraints, distance, and financial constraints consistently appear in the literature as barriers to ABE practitioners acquiring and developing new skills and knowledge through employer funded PD. As well as these barriers Mackay, Burgoyne, Warwick, and Cipollone (2006) identified the increasing administrative pressures on educators as further reducing the time and energy available for engagement in PD. Additional barriers reported in the literature include a lack of appropriate opportunities (C. Smith & Gillespie, 2007), a lack of face to face interaction, and a mismatch between the goals of the PD offered and the needs of the educators (B. Wilson & Corbett, 2001). The picture developing through the literature is that of a lack of timely professional development which is relevant to the needs of these educators.

Mackay et al.'s (2006) comprehensive report on research covering four Australian states revealed that more traditional forms of short term training, such as single-session workshops or conferences, are still the mainstay of ALE professional development. Mackay et al. (2006) found, many ALEs preferred face to face delivery for "hands on practical training delivered by expert facilitators", but this preference was for training "coupled with opportunities for informal interaction and information sharing with peers" (p.26). The PD seen to be most vital to provide was that which fulfilled the teachers' wants and needs at a local level. The PD which was 'most well regarded' was work-based and informal. The report recommended ALE participation in flexible, on-going professional development, including elements of teacher collegiality and reflective practice (Mackay, et al., 2006). While focussing on ABE teacher change through professional development in the United States, Smith, Hofer, Gillespie, Solomon and Rowe (2008) recommended that, as well as offering a variety of types of professional development and paying teachers to attend them, there be increased access to colleagues and directors during and after the PD. They explained that, "teachers felt better supported to make change when they participated with colleagues from their program and also had opportunities to discuss what they had learned with others following professional development sessions" (p.131). Job-embedded PD opportunities were seen to be more likely to be effective than traditional PD because they were more long term, relevant to the local context, and could enable the collegiality which helps teachers to implement their learning within their practice within a community of teachers (C. Smith & Gillespie, 2007). However, the distributed, part-time nature of adult literacy education presents a barrier to on-going collegial PD taking place face to face. Technology has been able to provide a solution in some cases.

The use of technology has made possible projects for ALEs such as the Adult Literacy Education wiki (Jacobson, 2008) and the National Institute for Literacy (NIFL) discussion lists (Taylor, 2008). While not formally researched, the descriptions of these projects indicate that these initiatives have enabled educators to develop their professional practice in a participatory way, by sharing resources, experiences, research and ideas, and also to develop a sense of community. The NIFL discussion lists, described by Taylor (2008) were informal professional development opportunities available to practitioners in all geographical regions and disciplines. From a practitioner perspective,

Taylor provided examples of how the lists were able to encourage practitioners, to promote the collegial sharing of resources and experiences, and to encourage discussion of critical and emerging issues at a national level. From the original four discussion lists Taylor considers that ten distinct communities of practice emerged, focussed around the domains of practice. In a similarly informal way the ALE wiki described by Jacobson (2008) grew organically into a community of practice from the needs of the practitioners. The wiki began with the intention of creating a repository of current research and professional wisdom which was not readily available at the time. This repository would enable educators to extend their professional development beyond the short term PD available to most ALEs, and increase what was seen as the limited opportunities for PD that were available. The wiki, which was open to ALEs worldwide, had its own discussion lists, as well as a relationship with the NIFL lists described by Taylor (2008). In addition, the wiki provided the possibility of participation in collaborative tasks within a virtual community, encouraged by their slogan "We're workers, not lurkers!"

On a smaller scale, the Alberta Adult Learning Council coordinators in Gray's (2004) study formed a moderated community of practice within their online environment. The online community of practice supported the informal learning of its members both in learning new skills and in developing their professional identity. This informal PD aided in overcoming the isolation of both their geography and the nature of their position. Members continued to access the community for both relevant information and the connection to others that it provided, and the community was considered a valuable resource even by those who did not actively participate. The learning, which took place primarily through the shared repertoire developed in the 'coffee room' of the online community space, was both informal and timely. Newer coordinators and community members were encouraged by more experienced practitioners who passed on their knowledge, as they in turn developed their identities as practitioners. While providing the possibility of overcoming barriers such as distance and financial constraints other barriers to participation highlighted here were a lack of access to the necessary technology, and a lack of understanding of the technology. Developing the skills to use these new technologies is another area of PD needed for ALEs.

The review of literature on online learning synthesised for the National Centre for Vocational Education Research by Brennan, McFadden, and Law (2001) highlighted the promise and hype of popular literature which "ignores the collision between technology and older views of teaching and learning" (p.15). In considering the effectiveness of online delivery for the teacher/trainer they noted that this often moved the educator into unfamiliar and uncomfortable territory. The review recommended equipping educators for the flexible use of technology beyond the basics, but pointed out that the PD provided needed to consider the workplace culture and context. Stites (2004) too acknowledged the need for PD which is cognisant of the educator's existing skill set, in his comprehensive review of literature on 'new' learning technologies in Adult Literacy Education and professional development for educators. While Mackey et al.'s (2006) research report listed learning technologies (or ICT) skill development as a key future need within the Australian Adult Literacy and Numeracy workforce, there was little motivation expressed by research participants for taking up any PD opportunities in this area, and some anxiety about it was reported particularly amongst the older respondents. The research reported by Warschauer and Liaw (2010) found that while learning technology integration was a desired PD area, "many adult education staff, especially those who did

not use computers much in their own education, may consider themselves ‘technology outsiders’ poorly equipped to teach younger adult learners” (p.19).

The case study of e-learning for adult literacy, language and numeracy in a New Zealand polytechnic reported by Davis, Fletcher and Absalom (2010) found that active involvement in professional development was needed by staff involved in e-learning. The large tertiary institution was able to provide a variety of types of PD from 'just in time' individualised support to formal qualifications. However, it was felt by participants in the study that gaining confidence in the use of e-learning was a key factor in its uptake. Engagement in communities of practice "with people helping and supporting each other" (Davis, Fletcher, & Absalom, 2010, p.26) was considered an important opportunity. The extension of support for educators beyond the boundaries of any initial PD activity was also advocated by Brennan et al. (2001) and Ginsburg (2004) who stated that "it is always helpful for teachers to see how other educators are integrating technology into instruction" (p.11).

In their report on e-learning in adult basic education in New Zealand, Davis and Fletcher (2010) indicated a need for professional development specific to e-learning, as well as suggesting that more formal PD could be supplemented through communities of practice. Their summary of findings (Davis & Fletcher, 2010) recommended the provision of “ e-learning-related professional development for tutor educators and workplace assessors who work in adult education”, and the undertaking of sustained research into “how the e-learning professional development needs of professionals and organisations can best be served” (Davis & Fletcher, 2010, p.3). This present design-based research endeavours to begin addressing that research gap, as well as providing, for one organisation, the job-embedded e-learning PD which is lacking for many adult literacy educators.

Many of the PD strategies recommended in recent New Zealand reports on e-learning in tertiary institutions and industry are unlikely to be adopted within a small organisation with limited resources, such as the organisation in this present research. The focus of this chapter now turns to the broader literature on professional development for e-learning, to investigate what has already been accomplished, and which strategies might best inform the situation of this single organisation with its distributed staff of adult literacy educators.

### **2.1.2 E-learning professional development for educators**

Professional development is an important part of growing as an education practitioner. As recognized in Wilson’s (2007) analysis of approaches to PD “faculty development is about supporting change in the workplace” (p.132). The educator’s workplace and individual context appeared often in the literature as important factors in PD for the use of learning technologies. While approaches to professional development range from Cole, Simkins and Penuel’s (2002) emphasis on project based professional learning, to the just-in-time support noted in Mansvelt, Suddaby and O’Hara’s (2008) research, the literature emphasises an understanding of the educator’s context, along with the relevance of the content and an appropriate means of undertaking the PD, as being important.

In his analysis of published lists of characteristics of effective teacher professional development, Guskey (2003) found no characteristics which were consistently listed. The importance of sufficient time, and collegiality and collaboration as characteristics of effective PD was noted, but with the

reservation that they must be purposeful and focussed. Guskey concluded that the effectiveness of these characteristics is often modified by real world contextual elements. The majority of the content areas in these lists focussed on science and mathematics teachers, as did Garet, Porter, Desimone, Birman and Yoon's (2001) large scale study. The findings of the Garet et al. study indicated that professional development which effected teacher learning was the more practical, contextualised PD activities of sustained and intense duration. Benefits were also found in PD activity which involved collective participation of teachers from the same workplace context.

In their review of literature on technology professional development for teachers, Lawless and Pellegrino (2007) found some of the consistent indicators of higher quality professional development to be those which enabled teachers to use new technologies in their practice; engaged teachers in tasks which were relevant to their individual contexts; continued for an extended period of time; and encouraged the collaboration which helped to build community. Their literature review indicated that the more ownership teachers had of the resources and understandings which were generated within professional development the more likely they were to use these transformatively in their practice. It also indicated that having a design-based component as an activity within professional development provided teachers with an increasing sense of ownership as well as practical experience of technologies in context. To minimise some of the barriers to continued e-learning PD which arose from the organisational culture or workplace context Wilson (2007), from her analysis of approaches to professional development, suggested that PD opportunities should "take into account disciplinary differences and local contexts when planning and implementing faculty development activities"(p.133).

In the New Zealand setting Rosenberg (2007) stated that "empirically, local studies have provided evidence that professional development and associated staff capability or capacity issues such as time, incentives, and priorities are critical factors" (p.8) in encouraging e-learning in New Zealand. He went on to suggest that e-learning would not develop fully until these were addressed. As Davis and Fletcher (2010) found in their study in the area of adult literacy education in New Zealand, "tutors and support staff require specific professional development in e-learning" (p.18) and that, as the requirements of staff change, the PD that is provided needs to change to address them. Mansvelt, Suddaby and O'Hara (2008) focussed on the staff perspective on professional development for e-learning in New Zealand and highlighted the lack of engagement in e-learning PD (53%) by respondents who highly valued that PD (95.6%). They suggested that this indicated an attitude that e-learning professional development was not "an intrinsic component of one's 'professional' work" (p.578). While their journal article focussed on PD in tertiary institutions in New Zealand, Stein, Shephard and Harris's (2011) blunt observation that "the biggest hindrance to the uptake of e-learning is people" (p.146) could be equally relevant to other e-learning professional development situations. Educators' individual abilities, beliefs, commitments and past experiences were found to be factors which influence their involvement in e-learning PD in New Zealand (Shephard, et al., 2008). From their research into technology institutes and polytechnics in New Zealand, Mitchell, Clayton, Gower, Barr and Bright (2005) found that tutors in smaller institutions had a lower level of e-learning adoption than those of larger organisations which were able to provide more in terms of tutor support, and that a lack of access to support and professional development for e-learning and technology in general was one of the greatest barriers to its use by educators. They identified the need for a variety of types of PD and suggested a "more targeted,

customised approach” (p.10) to cater for the range of tutors’ skill levels. While Mansvelt, Suddaby, O'Hara and Gilbert (2009) focussed more on quality assurance, they suggested that PD should be “multifaceted, flexible and cognisant of the distinctive characteristics, capabilities and priorities of staff, institutions and the broader contexts which both operate” (p.246).

The wide variety of staff views on e-learning PD uncovered by Mansvelt et al. (2008) mirrored the variety of attitudes to e-learning itself. They observed that the majority of e-learning PD opportunities undertaken were of an informal nature, and the value in these opportunities seemed to stem from their ability to help develop relationships which could provide an on-going, reassuring avenue of assistance. 'Just-in-time' assistance was seen as vital by all but the most experienced users, and access to examples of good practices was wanted. A perceived lack of time was the most significant barrier to engagement in e-learning PD. Recommendations from their research included facilitating informal PD, either face to face or online, such as online self-directed support material, shared practice, mentoring, and communities of practice. Timperley, Wilson, Barrar, and Fung's (2007) review of a range of teacher professional learning studies was oriented more towards student outcomes than staff outcomes, but they also recognised professional development which had extended time frames was used to good effect, and opportunities to participate in a community of practice, no matter where that took place, as having a positive impact.

In their review of research, Dede, Ketelhut, Whitehouse, Breit, and McCloskey (2009) wrote that “little is known about best practices for the design and implementation of these online teacher professional development models” (p.9). Two strong recommendations that Brennan, McFadden and Law (2001) synthesised from their review of research on online delivery of education were to have the added support of a community to help educators recognise the benefits as well as change and improve their practice, and to include models of professional development which are more collaborative.

Putnam and Borko (2000) suggested that the goal of the professional development should determine the most appropriate context for the learning to be undertaken, and “If the goal is to help teachers think in new ways, for example, it may be important to have them experience learning in different settings” (p.6). Some contexts, such as an online environment, may be introducing educators to learning in ways which they had never had the opportunity to learn in themselves. As Palloff and Pratt (2007) observed, “In an online course, faculty experience first-hand what it is like to be both an instructor and a student in the process. Participating in their own learning community helps them ... experience first-hand the value of this approach” (p.2). Reviews of literature which support research into e-learning in the New Zealand context (Davis, Fletcher, Brooker, et al., 2010; Guiney, 2013; Shephard, et al., 2008) agree that there is no stand-alone ‘one size fits all’ professional development solution. Both e-learning and the professional development needs of educators are constantly changing.

The importance of matching the professional development opportunities offered to the context of the organisation has been highlighted. In her analysis of approaches to PD for e-learning G. Wilson (2007) framed development as skills acquisition for the individual, and summarized current practices in four levels; novice, developmental, proficient and expert. In her study of e-learning managers in New Zealand institutions A. Wilson (2012) found that a variety of professional development

opportunities made available also progressed in four steps from “basic technical skills to immersive collaboration where learning communities were created” (p.899). Differing individual staff needs dictated the professional development opportunity which would work best.

While a range of formal professional development opportunities and styles has been offered, such as workshops, one-to-one sessions, online resources, customised training and on-call support, it is the informal professional development opportunities which are most often reported as beneficial (Shephard, et al., 2008; Stein, et al., 2011). The insights gained from Stein, Shephard and Harris’s (2011) research on conceptions of e-learning, and PD for e-learning, helped them to outline well-conceived professional development as “manageable; related to context; both anticipatory and ‘just-in-time’; on topics which are both essential ... and imaginative, creative and ... which bring with them reward and recognition for effort” (Stein, et al., 2011, p.160). Shephard, et al. (2008) aimed to devise a strategic framework to support PD for e-learning within New Zealand’s tertiary education sector. In their synthesis of findings, Shephard et.al. (2008) revealed that staff had identified effective PD as being individualized, relevant, situated, flexible, and collaborative with “exposure to ideas and examples of good practice... [and]...readily available pedagogical and technical support for learning” (p.G19). Their online survey results demonstrated that informal professional development strategies were the most common (Shephard, et al., 2008, p.A3).

In the literature, professional development is seen to be provided through both formal and informal approaches. There was however an emphasis on the provision of less formal, more relevant PD which involved sufficient focussed time, aligned to the educator’s own teaching context, and could be enhanced by practical collaboration with peers. This emphasis is reflected in this present research. The next section of this chapter will review the literature reporting cases of a range of e-learning, ICT or learning technology professional development for educators.

### 2.1.2.1 Case studies in the literature

Case studies of professional development for technology enhanced teaching are reviewed here to highlight the potential approaches for the PD in this present research. These approaches are discussed within the broad categories of whole institutional approaches, fixed term courses, online professional development, and peer or collaborative learning. Case studies of the use of communities of practice, an important peer learning approach for this present research, are discussed in detail in section 2.2.

#### **Whole institution approaches**

The broadest level of PD for learning technologies implementation in the literature is the ‘whole institution’ approach which has been applied in some tertiary institutions. Most of these highlighted the need for a variety of approaches to provide support for the variety of existing expertise of faculty. The triangulated support approach at North Carolina State University for beginning to teach in the online environment (Covington, Petherbridge, & Warren, 2005) involved administrative support, peer support through workshops, coaching and sharing experiences, alongside more formal training sessions developed from participant needs assessment. Jones (2008) suggested that training and support would not be enough to overcome the barriers to staff uptake of technology implementation, and described the University of Wollongong’s much more integrated approach. As well as education, support and training, their PESTER plan included planning and promotion,

encouragement, recognition and reward. This plan required a significant commitment from senior management to implement, but had the potential to more easily overcome staff resistance. Weaver (2006) discussed Monash University's staff development in the light of the challenges faced, and described a proactive, flexible, supportive approach which she found helped PD to remain relevant for her academic clients. Professional development began with face to face workshops run by a centralised support unit, the nature of which evolved as the nature of the attendees changed, followed by individual and group support as needed.

### **Fixed term courses**

Formal approaches in the literature often involved a course which was sometimes accredited. Most of this research was self-reported and descriptive, highlighting the benefits it provided. Both full qualifications such as Edinburgh Napier University's MSc Blended and Online Education (Smyth, 2009) and shorter term courses (Joyes, 2008) incorporated a teaching strategy which included a strong practical component, allowing the educator to develop their skills within the context of their own professional practice. The Campusnet online workshop (COW) at the University of Houston, a short term event which ran annually, was described by Kidney (2004) as incorporating this practical component. Thirty faculty applications to join COW were accepted each year, with over 150 faculty members participating over the six years it had been running. Very positive evaluations from participants were reported. Duffy et al. (2006) took a different approach in their development of the Learning to Teach with Technology Studio. This consisted of self-paced online courses addressing curriculum problems, supported by a mentor. Two of the four design commitments of the program were to provide personally relevant content, and accessible flexible delivery. The learners in this programme were task focussed and felt that collaboration would detract from a focus which was relevant to their own classroom. Joyes's (2008) description of the e-educator project, a twelve week module mixing online group work with self-paced study, was cognisant of the need for tutors to understand the online experience, to enable them to teach effectively online. This inquiry centred approach involved the tutors as students within a Moodle environment. This led to intuitive application of the skills they had learned within their own teaching contexts.

### **Online professional development**

Literature on studies of professional development which include an online aspect have come from diverse educational areas such as the online special education and adult disability courses described by Ludlow, Foshay, Brannan, Duff and Dennison (2002); the multiple case study of Boling and Martin's (2005) research on online professional development for cognitive literacy strategies for the elementary classroom; and Ketelhut, McCloskey, Dede, Breit and Whitehouse's (2006) description of the portal of the Milwaukee Public Schools Portal project, which was developed to provide access to information, opportunities for collaboration, and resources for professional development which highlighted local interests.

In their summary of principles for online staff development for e-learning, drawn from their review of the literature, G. Wilson and Stacey (2004) stated that "online staff development should focus on workplace practices and enable the sharing and pooling of knowledge amongst academic staff [and] ... provide authentic contexts for staff development" (p.39). Their paper suggested that as well as providing collaboration opportunities for geographically distributed staff, online professional development allows staff to experience the role of an online student. Studies such as these highlight

the ability of the online environment, and the asynchronous technologies available, to overcome the barriers of distance and time while still enabling educators to learn collaboratively. They also recognise that the constraints in the use of the online environment need to be considered alongside the opportunities provided for communication, discussion and collaboration.

The EdTech Leaders Online professional development programme was developed to aid in incorporating technology into education in the US. Treacy, Kleiman and Peterson (2002) shared what they saw as the affordances of online professional development as well as lessons learned from their implementation in several contexts. The programme embraced a learning community model as its approach, with online discussions as its focal point. While this is a descriptive piece which does not draw from empirical research, the advice provided aligns with much that is in the research, such as creating blended opportunities where possible, and integrating with local programmes where possible. The findings of a later review of research on online teacher professional development resulted in the development of a research agenda by Dede, Ketelhut, Whitehouse, Breit and McCloskey (2009). Their review revealed that the second most common theoretical influence was that of “communities of practice”, but that a definition of this theoretical framework was often not clearly articulated.

### **Peer Learning**

Communities of practice have also been discussed within literature on peer learning. Communities can provide examples of good practice, as well as support and advice, as practitioners adapt to using new tools. The literature acknowledges that there are advantages in learning in communities alongside others who are working towards similar goals. Brennan, McFadden and Law (2001) report that “teachers and trainers need the support of learning communities so that the benefits of the technology can be recognised in changed and improved practice” (p.58). It is the sharing of practice which provides the learning in context often lacking in more formal professional development. The literature supports the idea that learning informally with peers contributes to successful professional development. Learning within a community appears in the literature in relation to a variety of contexts such as taught courses, whole institution approaches, and across education sectors. Many of these organised professional development programmes have been structured to leverage the approach of learning within a community. The intentional formation of a community for professional development amongst peers can provide a community of learning. Examples of this approach to professional development are discussed in this section.

Institution wide initiatives for e-learning have included the leveraging of communities of practice. The advantages G. Wilson (2007) found in using peer learning as a strategy in a variety of institution wide educational contexts included shared expertise, mentoring, collaboration and the dissemination of innovative practices. G. Wilson stated that “at the heart of peer learning is the building on good practices that already exist within the local context and the development of skills and knowledge based on experiential learning methods or ‘learning by doing’” (p.129). The social aspect of Laurillard and Masterman’s (2009) model, for example, highlighted the importance of an informal means of professional development. Their model, which involved the development of two online pedagogical planners, included developing collaborative communities of innovation to sustain the online design environments to encourage teacher professional development in the innovative use of technology enhanced learning.



Communities of learning were also evident in the literature on projects. Triggs and John (2004) provide an account of The InterActive Education Research Project processes and the outcomes of the project. Researchers from higher education and practitioners from the school sector had worked collaboratively, in layered micro, meso and macro communities of practice, to facilitate professional development on ICT in education. This layered community model reduced the isolation of teacher practitioners, and encouraged interaction and risk taking, while providing support.

The two e-learning projects implemented during Vrasidas and Zembylas's (2004) development of a theoretical framework for the professional development of teachers and the development of professional development programmes online, were discussed to illustrate the new understandings gained by the researchers. The examples of programmes which they provided were course based and the activities in which the community members took part were "clearly defined, co-ordinated and evaluated" (p.330) and one might question whether these truly incorporated the development of a community of practice approach. There is potential for such communities to be short lived, limited by the extent of the programme and without internal leadership. The lessons learned from their implementation of this framework included some valuable insights to promote professional learning, but what is not clear is the nature of the community of practice within their framework.

In his online PD course for secondary teachers, Henderson (2007) sustained participants' engagement through the design of small communities of practice using a blended approach. His design-based research highlighted the importance of designing to encourage community cohesion. Across education sectors, research on the implementation of a four month professional development module for two middle schools to facilitate technology integration in their curriculum areas was reported by Vavasseur and MacGregor (2008). Twice weekly meetings were augmented by what they referred to as an online community of practice, with facilitated discussions on each week's topics. The online community described operated as a community of learning.

In the literature which considered PD at an institutional level, the initial findings of a qualitative research study on professional development centres in higher education were identified by Thompson and Kanuka (2009). The integration of technology into the PD centre's own practice in teaching educators to enhance their teaching through the use of technology in a blended learning context, was investigated. The findings supported the cultivation of communities as a possible way of extending professional development beyond the centre; encouraging the development of appropriate formal, non-formal or informal communities. Where possible, the communities were supported and sustained using online technologies to facilitate institution wide availability. Carr, Deacon, Cox and Morrison (2008) described a multifaceted staff development strategy at the University of Cape Town which began with workshops encouraging the development of a group to form the core of a community of practitioners teaching with technology. Other opportunities, such as project and research partnerships, show and tell sessions and seminars were used to extend the group membership and widen the periphery of the community of practice. Lloyd and Duncan-Howell (2009) noted the importance of the community and put it as the centre in their teacher professional development model. With a focus on online communities and their influence over both the theory and practice of teachers in the adoption of ICTs, they use a new metaphor. Teacher professional development in online communities is described, not as the growth of an individual or as a journey taken, but as an iterative cycle.

Peer learning can be enabled by communities of practice. The New Zealand Ministry of Education recommends that professional development programmes “provide ongoing opportunities for peer and organisational support. Build communities of practice.” (Barr, Neal, Moore, Delany, & Hunt, 2008, 2. Process: How? penultimate point). Davis and Fletcher (2010) also suggest that “communities of practice can provide a means of professional development for tutors engaged in e-learning” (p.21). The majority of the communities in the literature discussed in this section were communities of learning. Unlike communities of practice, communities of learning are deliberately brought together or developed with learning as part, if not all, of their purpose. A more organic approach to learning in community would be based on Lave and Wenger’s theories (Lave & Wenger, 1991; Wenger, 1998b) where there is no overt teaching nor any set learning goals – just learning in practice alongside fellow practitioners. These theories, and case studies illustrating them, will be discussed in the third section of this chapter.

### 2.1.3 Gaps in the professional development research literature

While the research on institution-wide professional development for teaching with technology or ICT, e-learning or online learning, has taken place across a variety of settings, much of it observes what is happening within universities, such as; University of Cape Town (Carr, et al., 2008), University of Houston System (Kidney, 2004), Levinsky College of Education (Zeiler-mayer, Mo, & Heilweil, 2004), Monash University (Weaver, 2006), North Carolina State University (Covington, et al., 2005), and University of Wollongong (Jones, 2008). There is a need in the literature for more research on how professional development in the areas related to e-learning can be provided in other educational contexts and within other types of institutions, particularly smaller organisations.

The body of published research on ABE professional development for e-learning is small. A search of the Education Resources Information Center database for professional development or professional learning and technology at the ‘Adult Basic Education’ level found only 48 items, 4 within the past decade, and only 1 of these relevant to this topic. A similar search for e-learning found only 14 items, 7 in the last decade, and only 1 of them relevant. A search of the Education Research Complete database produced even fewer items. In conducting their review of the literature on the characteristics of e-learning programmes helping to raise adult learners’ literacy, numeracy and language skills, Davis et al. (2010) relied on literature from the school sector because of the lack of literature available which focussed on adult learners. They recommend that sustained research be encouraged into “how the e-learning professional development needs of professionals and organisations can best be served” (p.21).

In his annotated bibliography looking at the literature on organisational approaches to e-learning, Guiney (2013) notes limitations in the literature. He reports that most studies are descriptive rather than investigative and that few have a sound methodological base. A dearth of studies with organisational approaches or longitudinal studies is recorded and Guiney suggests that studies of organisations, whose development of e-learning has developed beyond the beginner stage into more mature practice of e-learning, may be able to provide “guidance on the medium- or long-term issues, concerns, risks and opportunities organisations may face when they are attempting to make e-learning part of their business as usual” (Guiney, 2013, p.14).

Following their review of the current research, Whitehouse, Breit, McCloskey, Ketelhut, and Dede (2006) suggested two categories of future research; the engagement of teachers in online teacher professional development, and participant evaluation of programmes. In the research agenda for online teacher professional development developed by Dede, Ketelhut, Whitehouse, Breit and McCloskey (2009) recommendations were made of priorities in future research to fill the gaps revealed. These priorities included five which are relevant to this research. They are: research which investigates both whether and why a PD design model worked; research which considers sustainability and scalability; PD which uses an existing delivery environment rather than developing another alternative one; research which used both qualitative and quantitative data; and research undertaken using a design-based research methodology.

## 2.2 The theory of legitimate peripheral participation within a community of practice

As discussed in the earlier section on peer learning, a community based approach to professional development for e-learning has much to offer, not least because of the contextual nature of the learning which takes place in situ. “The situative perspective provides lenses for examining more thoughtfully the potential of new technologies for supporting and transforming teachers’ work and learning.” (Putnam & Borko, 2000, p.10). In taking up a design-based research methodology, it is important to consider the theoretical foundation of the research. Underpinning this present research is the situated learning theory of legitimate peripheral participation (LPP) within a community of practice (CoP) (Lave & Wenger, 1991). As social beings our interaction with the world brings us into contact with multiple communities each with its own practice. Whether these communities are discrete or overlap each other, each will be inhabited by members with varying levels of expertise. Among them will be members to whom others look because of the fullness of their understanding of the practice of that community – these are the oldtimers or ‘masters’ of that practice. Newcomers to the practice are usually at an ‘apprentice’ level and somewhere in between the two are ‘journeymen’, more adept than apprentices, but not yet masters. LPP, the theoretical perspective of this research, considers the way in which the members of a community acquire the knowledge which enables them to transition from apprentice to mastery of the community’s practice. In his unpublished doctoral dissertation, Wenger (1990) describes LPP as “neither a specific educational form as opposed to another, nor a pedagogical method; it is a theoretical viewpoint, a *general analytical category*, which describes learning as a mode of engagement in practice” (p.126). Individual members’ identities develop through engagement in the community’s practice. Beginning with legitimate access as a member of the community, the newcomer grows in knowledgeability of the practice through participation. This participation begins as peripheral, and then extends further into the practice of the community as the member gradually becomes a full participant. Wenger writes not of the individual and their learning constituting the community, but of the community constituting the learning of the individual. In this section of the chapter the literature on legitimate peripheral participation and the related community of practice theory is reviewed.

### 2.2.1 The theory has evolved

In the more recent CoP literature Duguid (2008) observed that a community of practice had been welcomed “as a useful, management-controlled, problem-solving tool that nonetheless comprises

people with an interest or even a ‘passion’ for their work” (p.2). Descriptions of CoPs include social groupings and a prominence of practice but, as Duguid notes, a focus on groups with a shared passion for a topic precludes those members of the workforce whose participation in shared practice takes place simply because it is an element of their paid employment. Communities of practice as a learning concept, as described by Lave and Wenger (1991), focussed on learning through engagement in practice, but Duguid considers that the focus on practice has often been subsumed into the concept of the community. As he points out, “community of practice theory is nothing at all without practice” (p.3).

In summarising the history of CoP theory Duguid confesses to drawing together Lave and Wenger’s (1991) theory, which he felt did not incorporate a theory explaining modern day institutions or organisations, with Orr’s (1996) study of Xerox reps, and thus influencing the direction in which the theory was put to use. Community of practice theory came to be seen as a management tool. He suggests that through this change in use, CoP theory, which was

a means to analyse the tensions with which organisational structure must live, has been deployed to hide those tensions. The diagnostic power of the concept has been lost in claims for its healing potential. ... Such an approach quickly turned the concept into little more than a placebo. Communities of practice were something to be ‘cultivated’; ‘leveraging’ rather than learning became the central concern. (Duguid, 2008, p.8)

This section now reviews the seminal literature on legitimate peripheral participation and communities of practice to trace the path of this development and consider the implications for this present research.

### 2.2.2 In the beginning

In the seminal works on the theoretical viewpoint of legitimate peripheral participation (LPP), Lave and Wenger (1991, 2002) illustrated their situated learning theory mostly through the studies of apprenticeship style models of learning. This sociocultural perspective on learning describes the central process of LPP, through which an apprentice to a practice acquires the skills and knowledge to enable them to successfully undertake all of the tasks performed by a full practitioner, or master. The emphasis here is not on the cognitive processes of this individual, but on their participation in practice within a social world, “both absorbing and being absorbed in – the ‘culture of practice’” (Lave & Wenger, 2002, p.113). Learning how to belong as a member of a community of practice and to be identified as a practitioner takes place, not through formal teaching, but through immersion in the day to day practice of the community. Legitimate access to the full range of activities involved in that practice allows the newcomer, or apprentice, to develop a sense of what is involved in the practice and how it all fits together. By participating in tasks of increasing value alongside practitioners with varying of levels of knowledgeability, an apprentice begins to develop their own identity as a practitioner. This centripetal movement towards mastery of a practice follows a curriculum laid out by the practice of the community itself. LPP is also described by Lave and Wenger as an ‘analytical perspective’, and it is as such that it will be employed in this present study to enhance the understanding of the learning taking place.

The lens of legitimate peripheral participation is a bi-focal one. The distance lens helps us to focus on the community of practice, its development, cycles of redevelopment and the tensions which are inherent in any sociocultural transformation. Lave and Wenger describe the tensions as being played out most often between those masters who seek to replicate the community and the apprentices learning to displace them. Rather than the dyadic forms of learning in more conventional educational settings, learning within a community of practice involves a complex web of relationships between peers and near peers, between apprentices and those more skilled journeymen, and between masters and those who are attaining mastery. The close reading lens helps us to focus on the individual as they initially participate peripherally, and then move on to increased knowledgeable and more adept practice. “The *person* has been correspondingly transformed into a practitioner, a newcomer becoming an old-timer, whose changing knowledge, skill, and discourse are part of a developing identity - in short, a member of a community of practice” (Lave & Wenger, 1991, p.122). As the apprentice practitioner evolves in this new social membership, they construct their identity.

Lave and Wenger (1991) provided examples of five communities of practice through which the concept of LPP was illustrated. Examined through this analytical lens, studies of Yucatec midwives, Vai and Golan tailors, naval quartermasters, supermarket meatcutters, and non-drinking alcoholics each highlight aspects of LPP. Key elements which were highlighted included learning without teaching, the curriculum of practice, individuals’ learning trajectories, and the importance of broad access to legitimate peripheral participation across the breadth of practice for the development of an identity in practice. A crucial element of this learning curriculum is access, not to instruction, but to practice as a learning resource. Community members, particularly newcomers, require access to other members of the community involved in all aspects of the community’s practice in order to avail themselves of the broad view, which provides them with the examples of mature practice to which they can aspire. Lave and Wenger (1991) pointed out that “depending on the organisation of access, legitimate peripherality can either promote or prevent legitimate participation” (p.103). However, access to practice must also be legitimate. Without legitimate participation in areas of practice, apprentice practitioners are deprived of areas of their learning curriculum.

Another key condition for access to practice is transparency, both of the practice and the tools of practice. A broad definition of “the notion of transparency, [is] ... a way of organising activities that make[s] their meaning visible” (Lave & Wenger, 1991, p.105) or “the cultural organisation of access” (Lave & Wenger, 1991, p.102). The ‘tools of the trade’ are an important facet of the practice to which apprentice practitioners also require access. “Becoming a full participant certainly includes engaging with the technologies [or artifacts] of everyday practice” (Lave & Wenger, 1991, p.101). The circumstances surrounding the use of an artefact and the ways in which it is used can also become a means to include or exclude members from practice. Access to tools and practice, or lack of it, is one potential means of control within a community, and a potential cause of tension, but not the only one. Lave and Wenger refer to the tension inherent in the life cycle of the community, as the newcomers develop their identities as more adept practitioners and eventually displace the existing masters. There may also be tension at a more immediate level where newcomers with their own perspectives challenge the existing practice by asking ‘constructively naïve’ questions as they learn and develop their identities. Our increasingly changing world is reflected in communities of practice where “everyone’s participation is legitimately peripheral in some respect [and] everyone

can to some degree be considered a 'newcomer' to the future of a changing community" (Lave & Wenger, 1991, p.117). Increasingly a master practitioner in many of our 21<sup>st</sup> century western communities of practice must continue to develop their identity, as new practices emerge and require mastering.

The theory of LPP emphasises the longevity of the learning process and lifelong learning within a community of practice. This extends to the community itself and the ways in which it continues to grow and change and reproduce. The journey of an apprentice practitioner to mastery of their practice incorporates the development of their identity as a practitioner. Lave and Wenger (1991) claimed that the development of an identity is "fundamental to the concept of legitimate peripheral participation [and that].... learning and a sense of identity are inseparable: they are aspects of the same phenomenon" (p.115). The contribution the apprentice practitioner makes, through their increasing participation in the community's practice, grows in value as they become part of the community. However, the converse is also possible. Lave (1991) states that "the value of mastery in a community of practice diminishes if the process of centripetal participation is correspondingly limited or extinguished" (p.77).

Lave and Wenger (1991) note that in a CoP "there is very little observable teaching; the more basic phenomenon is learning" (p.92). LPP provides apprentices, and even more experienced members of a CoP, with exemplars of the behaviour, skills, and identities at all stages of development, which encompass the practice as a whole. The "learning curriculum unfolds in opportunities for engagement in practice" (Lave & Wenger, 1991, p.93). In this decentred view of learning, mastery itself "resides not in the master but in the organisation of the community of practice of which the master is part" (Lave & Wenger, 1991, p.94), for the masters too developed their identity through engagement in the practice of the community. To investigate the learning within a community, one must look to the community itself and what takes place there rather than to any mandated or prearranged curriculum. The learning curriculum is what *actually* takes place, not what is *supposed* to take place.

### 2.2.3 A different perspective

Lave (1991) acknowledged that the concept of 'communities of practice' was "left largely as an intuitive notion, which serves a purpose...but which requires a more rigorous treatment" (p.42). Lave and Wenger (1991) did however provide a clear definition of a community of practice as "a set of relations among persons, activity, and the world, over time and in relation with other tangential and overlapping communities of practice" (p.98). Many years later Wenger (2006) asserted that "the term Community of Practice was coined to refer to the community that acts as a living curriculum for the apprentice" (p.4). In the book 'Communities of practice: Learning, meaning, and identity' Wenger (1998b) further developed the concept of communities of practice, here the theory was still very much a viewpoint through which to observe communities. Wenger explained that "a perspective is not a recipe; it does not tell you just what to do. Rather, it acts as a guide about what to pay attention to, what difficulties to expect, and how to approach problems" (Wenger, 1998b, p.9). Through the perspective developed in this work Wenger closely examined the concepts of communities of practice and of identities that were important to the argument proposed in the previous work but did not come under close scrutiny.

In relation to the differences between local community practices and generic practices Lave and Wenger differed in their expansion of the theory. As Hodkinson and Hodkinson (2004) pointed out, while Lave (1996) saw each instance of practice as an individual circumstance to be uncovered, Wenger (1998b) proposed a framework which encompassed the development of identity within all learning in practice. Wenger (1998b) characterises 'identity' as being developed through participation in the practice of the community in relation with others. The process of LPP was defined in a more granular way but essentially the concept remained the same as that described in "Situated learning: Legitimate peripheral participation" (Lave & Wenger, 1991). The notion of belonging to a particular community was defined by engagement in that community's practice. Engagement in practice became possible when a newcomer legitimately participated peripherally through having access to all of Wenger's (1998b) "three dimensions of practice: to mutual engagement with other members, to the actions and renegotiation of the enterprise, and to the repertoire in use" (p.100). Competent membership within a CoP was identified through these three dimensions of practice by observing the mutuality of a member's engagement within a community, their accountability to the community's enterprise, and their ability to negotiate the repertoire of the community to engage in its practice.

Communities of practice themselves were more clearly identified through a defining list of fourteen indicators of formation which Wenger (1998b) provided (p.125). New terms were introduced to the theory through this work, as Wenger sought to provide us with a vocabulary to enable us to articulate our observations of the CoP concept. Communities were described as having 'boundaries' and 'boundary objects' which include "artefacts, documents, terms, concepts and other forms of reification around which communities of practice can organise their interconnections" (Wenger, 1998b, p.105). 'Brokering' is the process by which people facilitate connections by sharing elements between communities. 'Reification' of processes and products describes the concretisation of elements within a CoP - "a slight illusion of excessive reality" (Wenger, 1998b, p.58).

Wenger considered that "Identity in practice arises out of an interplay of participation and reification" (Wenger, 1998b, p.153), and drew parallels between practice and identity. In terms of participation and reification where practice was seen as negotiation of meaning, identity was seen as negotiated experience of self. Where practice was seen as community, identity was seen as membership. Where practice was seen in a shared history of learning, identity was seen in a learning trajectory. A 'learning trajectory' was the path which a community member took as they navigated the living curriculum of the community's practice on their journey from apprentice to master. Wenger (1998b) introduced five types of learning trajectories; peripheral, inbound, insider, boundary and outbound trajectories. A sixth learning trajectory, a marginal trajectory, was implied through Wenger's discussion of the range of participation and non-participation possibilities; insider, outsider, peripheral, and marginal. Non-participation may have enabled learning through being peripheral, or have been problematic and led to being marginalised. Members' perspectives of both their identities and their participation in a community were often dependant on the learning trajectory which their legitimate peripheral participation had made possible.

Wenger, White and Smith (2009) referred briefly to LPP through the example of a community of people with myeloproliferative disorders who belonged to an email list. The example did not come from a workplace community of practice and displayed none of the tensions discussed by Lave and

Wenger (1991). However in this text, the digital technologies available to communities at that time were very much at the forefront of the content. Some behaviour found in online environments was expressed in terms of its relation to the theory. Viewing, but not actively participating online, known as 'lurking', was interpreted as "legitimate peripheral participation". Wenger, White and Smith (2009) employed their community of practice perspective as a means to view the interrelations of communities and the technology they employ. As they observed, "technology extends and reframes how communities organize and express boundaries and relationships, which changes the dynamics of participation, peripherality, and legitimacy" (p.11). This more practical text, with some reference to the theory, contained information and supporting resources for those hoping to create, develop, extend or manage a community within a digital environment.

## 2.2.4 A different direction

In early works that discussed LPP (Lave & Wenger, 1991, 2002; Wenger, 1998b) it was described as an analytical viewpoint through which to observe communities of practice, and the concept of managing a community in any way is not one which was advocated. Wenger's later works, without Lave, exhibit a different viewpoint on communities of practice and the theory associated with them. The change from the social learning process of newcomer to old-timer and individual learning trajectories of the earlier works, to its use as a management tool in later texts was noted in Li et al.'s (2009) critique of Wenger's CoP concept. They found it difficult to differentiate a CoP from other group structures using Wenger's three dimensions of mutual engagement, joint enterprise and shared repertoire and concluded that "the depiction of CoP in the 1998 publication is prone to a variety of interpretations and is challenging to apply" (Li, et al., 2009, Wenger 1998, para 3). The variety of perspectives on communities of practice is discussed in Cox's (2005) comparative paper on four seminal works (J. Brown & Duguid, 1991; Lave & Wenger, 1991; Wenger, 1998b; Wenger, McDermott, & Snyder, 2002). He describes Wenger's work as "increasingly 'performative' rather than 'analytic'" (p.528) and the notes the growing focus on the application of communities of practice as a knowledge management tool. Cox highlights the divergences in their concepts of community, learning, power, change, formality and diversity. Only the concepts of learning as being socially constructed, and the centrality of identity within it, remain as common ground. Cox (2005) suggests that the re-appropriation of the theory in a range of settings can be attributed to the ambiguity of both 'community' and 'practice' as elements of the theory and, given the range of interpretations offered, concludes that these "divergences outweigh the common ground found in the stress on situated negotiation of meaning and the importance of identity in learning"(p.536).

An emphasis on the value that communities of practice can provide for organisations, and the recognised divergence in views (Cox, 2005; Duguid, 2008; Lave, 2008; Li, et al., 2009; Roberts, 2006), began to be seen in *Communities of practice: Learning as a social system* (Wenger, 1998a) with the suggestion that a CoP had 'leadership'. Wenger outlined both the importance of internal leadership and the variety of forms which it could take, and emphasised that "in all cases, leadership must have intrinsic legitimacy in the community" (p.7). He went on to suggest that "to be effective, therefore, managers and others must work with communities of practice from the *inside* rather than merely attempts to design them or manipulate them from the *outside*." (Wenger, 1998a, p.7). Wenger focussed more on organizations designing themselves as social learning systems in "Communities of practice and social learning systems"(2000) where he introduced a conceptual framework which was



intended, not only for analysis, but also for designing organisations. Communities of practice were defined here as “the basic building blocks of a social learning system” (Wenger, 2000, p.229) because they contained the competencies which made up the system. However Wenger went on to describe a community of practice which was far more formal than those presented in earlier works. The CoP concept became about driving change and management of knowledge. Wenger (2000) suggests that in “designing itself a community should look at ... events, leadership, connectivity, membership, projects, and artifacts” (p.230). In each of these areas he suggested decisions which the community needs to make. In terms of membership, Wenger (2000) recommended that the community should be “devising processes by which newcomers can become full members” (p.232). Could a community of practice, according to the original definition, have designed itself? While, elements of the original type of CoP were seen in Wenger’s discussion of learning trajectories as a design element of identities, much of this managed CoP concept is at odds with the statements in earlier works describing the practice of the community as the learning curriculum for newcomers to undertake peripherally and, through growing participation, become full members.

Wenger explained that communities of practice add value to organisations by transferring best practices and developing professional skills, in “Communities of practice: The organizational frontier” (Wenger & Snyder, 2000). Communities of practice were defined as “groups of people informally bound together by shared expertise and passion for a joint enterprise” (p.139), yet this description was embedded in a view of CoPs which sees them as tools in a knowledge economy. These CoPs were described as adding value through driving strategy, starting new lines of business, problem solving, and helping to recruit and retain talent. In stating that “only several dozen forward-thinking companies have taken the leap of ‘installing’ or nurturing them” (Wenger & Snyder, 2000, p.140), other companies at that point in time are left to sound sadly lacking in initiative. While Wenger and Snyder (2000) emphasised that CoPs cannot be mandated into existence, they do recommend that “successful managers bring the right people together, provide an infrastructure in which communities can thrive, and measure the communities’ value in non-traditional ways”(p.140). There was a much more obvious change of emphasis shown where CoPs are said to “give you both the golden eggs and the goose that lays them” (Wenger & Snyder, 2000, p.143). This concept of CoPs diverged significantly from the original concept of an entity which provided the capacity for LPP to take place to enable members to engage fully in the practice of their community. It became a tool for knowledge management within organisations.

The idea of community creation and knowledge management was elaborated substantially in *Knowledge management as a doughnut: Shaping your knowledge strategy through communities of practice* (Wenger, 2004). In *Cultivating Communities of Practice: A Guide to Managing Knowledge* (Wenger, et al., 2002) this was acknowledged by the authors as “an important step in moving from theory to practice” (p.xi). From its initial discussion of conceptual foundations, Wenger et al. moved on to provide basic principles and guidelines, with examples from existing communities, for the support of a community through the identified stages of its development.

## 2.2.5 Reflecting and looking forward

The development of the concept of CoPs over nearly 20 years, was considered by Wenger (2010) in his chapter on the ‘career’ of the concept. The focus in this text is at the broader level of a social learning system and develops the concept to encompass a much wider vision of community than the

focus of this present research. Wenger highlighted the importance of boundaries and of identity and asserted that "the concept of identity is a central element of the theory, just as fundamental and essential as community of practice" (Wenger, 2010, p.182). He discussed the criticisms of the concept, and noted the development which took CoP from being considered a descriptive analytical concept to that of a design intention or technique. In defence of his viewpoint he states, "For myself, I find the combination of analytical and instrumental perspectives particularly productive" (Wenger, 2010, p.193).

The limitations of the use of the CoP concept for knowledge management were explored in Roberts' (2006) critique, where she reiterated the notion that management can only support the development of CoPs, not organise them into existence. She acknowledged that CoP theory continues to evolve as an approach to knowledge management, but saw a need to "refocus on Lave and Wenger's original conceptualization of communities of practice as a context for situated learning" (Roberts, 2006, p.636).

Lave (2008) stated, in her epilogue to Amin and Roberts (Eds.) (2008) *Community, Economic Creativity, and Organization*, that LPP was intended as "a means of analysing situations of all kinds in which learning was of interest to researchers ... [and] was specifically not intended as a normative or prescriptive model for what to do differently" (p.283). She emphasised the importance of identity in relation to others as a more fundamental element than either knowledge or mastery. The active involvement of the learner in developing their knowledgeability through engagement in practice, and centripetal movement within a community of practitioners were also highlighted. A point Lave felt was not clarified sufficiently in the original text was the concept of legitimate peripheral participation being one indivisible concept rather than the sum of three parts. She revealed the deliberate initial use of 'participation' with a double meaning "both as 'a person participating' and as a 'practice participated in'" (Lave, 2008, p.286) to keep the person firmly as a person-in-the-world. A movement away from the single trajectory of apprentice to master was seen in Lave's (2008) acceptance of the concept of degrees of participation. Wenger's insistence that everyone is involved in LPP was referred to by Lave as 'inspired', and acknowledgement was made that the concept of LPP may include both peripheral and marginal participation.

Communities of practice continued to be described by Lave (2008) as "sites of conflict, difference, and change" (p.288) and the lack of examples to illustrate this in Lave and Wenger's (1991) work is both noted, and understood to contribute to the 'rosy' picture of the generic community of practice which is often painted. The concept of communities of practice was intended as an analytical viewpoint rather than an existing entity. The seminal work (Lave & Wenger, 1991) "proposed that we pay attention to the process by which communities of practice are produced and produce themselves, asking what newcomers are becoming part of, rather than looking for a community of practice as a product" (Lave, 2008, p.291). Applied analytically, communities of practice theory should take into account the identities which the participants arrive with. Lave observes that many projects with a more prescriptive application of the theory seem to ignore the possibility of pre-existing social relations and often their potential tensions, conflict and contradictions. Lave's own work continued to employ legitimate peripheral participation within communities of practice. She asserts that the original "'take' on communities of practice was part of a powerful and productive

approach to social analysis" (p.295), but acknowledges that "it is also clear that this is now just one conception of communities of practice among others" (Lave, 2008, p.295).

Community of practice theory was seen as an active construct by Duguid (2008) who suggested that those "who are currently engaged in the work of construction... are entitled to use the term as they find it." (Duguid, 2008, p.1) This repositioning of use, related to the theory as it continues to be constructed, is not unexpected. An indication by users of the theory as to how this position was arrived at from Lave and Wenger's original theory would provide clarification. Cox (2005) too contends that "it is therefore essential to position any use of the concept clearly in relation to one of these versions" (p.536). I would modify Cox's statement somewhat to suggest that any use of the CoP concept should clarify its interpretation of both 'community' and 'practice', articulate its orientation in relation to these interpretations, and identify any divergence from the original CoP concept within that context. The version of this theory which underpins this present research is Lave and Wenger's (1991) original analytical viewpoint. This is discussed in more detail within the theoretical findings in chapter eight. Literature on the application of the concept of communities of practice is reviewed in the third and final section of this chapter.

## 2.3 Literature on the application of CoP or LPP theory

The growing body of literature providing examples of communities of practice (CoPs) was reviewed in preparation for applying the LPP theory to the community of practice within the organisation in this present research. A wide variety of entities were regarded by authors as CoPs. Duguid (2008) foregrounded the change in the CoP theory from analytical viewpoint to active construct. In much the same way, the literature review of Burch et al. (2012), which focussed on the concept of leadership within CoPs, proposed a distinction between a true CoP or Wenger-CoP (W-CoP), as described in the seminal literature, and a modified-CoP (or M-CoP). They define a W-CoP as

a process that all members of an institution are unconsciously a part of in varying degrees depending on their specific shared interest, and on their connectivity with others having the same shared interest, and with varying degrees of involvement and situated learning depending on relative levels of skills and experience. (Burch, et al., 2012, p.12)

Any form of intentional leadership, facilitation or structuring leads to modification and the W-CoP becomes an entity rather than a process, and is referred to as an M-CoP. Burch et al. (2012) consider that it is not possible to have facilitation or organised leadership within a W-CoP. This highlights the need for serious consideration of the nature of any CoP under investigation.

In this thesis M-CoPs are referred to as 'modified' and W-Cops are referred to as 'organic'. The literature offered examples of organic and modified communities of practice, both collocated and online, and the variety of foci provided an overview of the growing diversity of research on this topic. The literature reviewed encompassed theoretical perspectives, investigations of the characteristics of CoPs, and the use of CoPs within education and other domains, descriptive cases of CoPs both within courses and organisations and external to them. This section of the thesis will review the more relevant pieces of this literature, beginning with those which consider face to face communities outside the domain of education, but focussing on those CoPs within the domain of education which involved an online aspect.

In the studies conducted by Borzillo, Aznar and Schmitt (2011) and Probst and Borzillo (2008) all the multinational corporation CoPs have been modified in some way. The 5A's integration process model (Awareness, Allocation, Accountability, Architectural, Advertising) developed by Borzillo et al. (2011) illustrates the movement of a member from the periphery to the 'core' of a community of practice. Their inductive study developed this grounded theory from a four year study involving data collected from 89 informants in nine CoPs in seven multinational corporations. While they initially defined a CoP as a "self-organized group of individuals concerned with a specific practice" (Borzillo, et al., 2011, p.25), this model is focussed on knowledge management in a much more formal way. All these CoPs had very strong, structured leadership models. "In fact, CoP leaders must commit 20-50% of their working hours to the promotion and supervision of the CoP's activities to ensure that it remains operative." (Borzillo, et al., 2011, p.27). Five levels of member participation were found; peripheral member, active member, core member, facilitator, and leader. In this model the entry of a member to the level of 'core member' takes place at the 'accountability' phase, "when active members take the lead in small learning activities and assume responsibility for presenting a practice and their field of expertise at larger learning events" (Borzillo, et al., 2011, p.34). While they refer to 'classical CoP theory' and 'classical CoP literature', which includes Lave and Wenger (1991), Wenger (1998b) and J. Brown and Duguid (1991), the concept of legitimate peripheral participation (LPP) is notably absent.

The concept of LPP is not directly discussed in the application of Handley, Clark, Fincham and Sturdy's (2007) situated learning framework for individual learning, but the important focus on participation in situated learning is outlined through the works of Lave and Wenger. Handley et al. (2007) point out that the learning trajectory of 'newcomer' to 'oldtimer' is no longer seen as a gradual transition which inevitably concludes with full participation as in Lave and Wenger (1991). They illustrated their point through vignettes from their research context of organic communities of management consultants. Handley et al. perceived a lack of clarification of the ways in which identity is developed within situated learning and they sought to address this through their conceptual framework. Identities and practice within their framework are developed through participation in multiple CoPs. Their framework, which focusses on individual learning, "illustrated that development of identity and practice are mediated by the participatory opportunities available to individuals in their communities of practice" (Handley, et al., 2007, p.188).

Lave and Wenger's (1991) concept of LPP is explored in the context of more complex modern workplace settings by Fuller, Hodkinson, Hodkinson and Unwin (2005). In the two case studies they discuss, all the community members are employees. In considering the learning trajectories of the apprentices employed under the Modern Apprenticeship programme, Fuller et al. (2005) feel that their previous research shows the value of what they call "expansive models" of apprenticeship. These models include time spent learning both on-site in the workplace and off-site in formal educational settings. From this perspective they perceived a shortcoming of LPP theory was that it was dismissive of formal education outside the workplace setting. Wenger (1998b) had directly addressed this and suggested that it was worthwhile as a supplement, rather than a substitution for practice, and that "extractive training ignores an organization's most valuable learning resource: practice itself" (p.249). While acknowledging the strengths of LPP, Fuller et al. (2005) also considered that its shortcomings included the underdevelopment of the significance of power relations and

conflict, and insufficient acknowledgement of the influence of experienced newcomers and full participants who continue to learn within a CoP.

In the domain of education, Hodkinson and Hodkinson (2004) see Lave and Wenger's (1991) seminal work as concentrating primarily on newcomers to a workplace, and are careful to point out that their own focus is on experienced teachers' professional learning. Through the case studies of the organic co-located teacher communities within four departments at the centre of this study they emphasise the essential condition of membership of a CoP for learning, while noting that the characteristics of that CoP and of the membership of it may vary greatly. From their study Hodkinson and Hodkinson (2004) propose three concentric contexts as influencing teachers' professional development; the school, the department, and the individual. They suggest that researchers carefully determine the level at which the concept of a CoP is described as operating. From research encompassing case studies of three tertiary institutions, a similar framework is developed by Viskovic (2006) for supporting individual tertiary teachers in their professional learning. This framework suggests responsibilities for an institutional CoP, a local CoP and the individual, within layers of community, to provide "a whole institutional framework around teacher development in work groups" (p.335). The potential difficulties in successfully implementing such a framework, such as teacher isolation, the unsuitable nature of some local CoPs, and the limitations imposed by some hierarchical management structures, are noted.

Lea (2005) advocates a return to the original concept of CoP theory as a heuristic. In the context of higher education with a focus on online environments the reclamation of the theory for investigating learning as practice rather than using it as a model for modified CoPs is suggested. Lea also notes the move in Wenger's work away from the initial introduction of LPP as a viewpoint and towards its use as a model for the design of knowledge communities and "the use of the concept as a design aid for the formation of on-line learning communities" (p.186). She briefly examines some of the literature in this area and highlights the emphasis on design and implementation rather than on critique. While Lea's (2005) observation is not based on empirical evidence, she notes that "too often the original qualities of the concept have been lost; it is infrequently being invoked in order to understand more about present day practices ... but is more commonly used to underpin directives as to how to create effective learning environments" (p.194) such as in recommendations from Wenger's later work (Wenger, 2010; Wenger, et al., 2002; Wenger & Snyder, 2000) for the creation of modified CoPs.

### 2.3.1 Communities of practice online

Opinion found in some of the literature suggests that a CoP online cannot truly be a community of *practice*. Lueg (2000) questions whether virtual communities can be CoPs if it is only the communication, rather than the activity, which takes place virtually. Possibly because of the examples chosen to illustrate it, the argument that accessing an environment through a computer screen and keyboard still constitutes learning in the physical world rather than the virtual environment is a weak one in terms of identifying where the practice takes place. Hung and Nichani (2002) seek to reclassify online CoPs as quasi communities using the distinction between 'learning about' and 'learning to be' within a community. Their argument appears to be supported by observation more than empirical research but they consider that, with the exception of a community of programmers who may learn to 'be' programmers alongside others online, most online

communities which they mentioned were quasi communities because members were learning 'about' rather than learning to 'be'. They do acknowledge that online technologies can be used by existing CoPs, enhancing their abilities and widening their reach, but consider that the rich contexts of CoPs cannot be found in what they call quasi-communities. "Technologies that support virtuality through online communities should, thus, be seen to support, complement, and extend participation to existing CoPs and social communities." (Hung & Nichani, 2002, p.29). Hung and Nichani (2002) consider that "learners should participate in performing tasks, mediated by tools and artifacts similar to those used by practitioners within the CoPs" (p.29) when an online environment is being used to support a CoP.

Henri and Pudelko (2003) clarify the point that while "all virtual communities are learning communities because their members learn while taking part in their activity... all learning communities are not communities of practice" (p.476). Even in a virtual environment a CoP is the "result of the involvement of individuals in the actions of professional practice" (p.438). Using the activity involved in the social context of emergence and evolution of a virtual community as the unit of analysis Henri and Pudelko (2003) created the beginnings of a framework which distinguishes different forms of virtual communities. They identified four types of community; Community of interest, Goal oriented community, Learners' community, and Community of practice. The CoP was seen as the most intentional and the most cohesive of virtual communities and this results from the members already being involved in a shared professional practice.

Focussed on uncovering the critical elements of an online or internet mediated CoP, Apostolos and Alivisos's (2010) literature review led to the production of tables which outlined these critical elements within the categories of structural characteristics, motivators, success factors and barriers. Wenger's initial theory being descriptive rather than prescriptive was included as a 'barrier', and having efficient and capable facilitation was included as one of the 'success factors'. This indicated that Apostolos and Alivisos considered a modified CoP to be a successful one. Following the analysis of 38 articles they concluded that, "the design and operation of an IMCoP [internet mediated CoP] is a very complicated, nondeterministic process, which has to take into account many complex parameters and keep the balance between state of the art technology and personal/communal cultures and motives" (p.6). The literature review on online communities of practice written for the New Zealand Ministry of Education by Lai et al. (2006) provided a broader view which considered the characteristics of CoPs, their life cycles, online CoPs(OCoP), OCoPs for teacher PD, and Designing OCoPs. The review found a paucity of literature containing empirical studies of OCoPs. Very few of those found had a focus on teaching and learning, so the search was widened to include other online and virtual communities. This review acknowledges that many of the online communities of practice referred to in the literature are not actually CoPs, but other forms of community such as commercial communities, interest groups, networks or e-learning communities. While a blended CoP was not discussed by Lai et al., the summary of features which distinguish OCoP from CoP (p.16), highlighted the complex nature of a blended community, which may include features of both community types. The review discussed the life cycle and design of OCoP, as well as the issues of building trust and relationships, and transferring tacit or situated knowledge in the online environment. The conclusion drawn was that, although difficult, a CoP can develop in an online environment. OCoPs which had provided effective professional development were discussed; some of these are included in more detail later in this chapter.

## 2.3.2 Cases

Case studies of communities of practice are reviewed here to illustrate the application of the CoP approach, and the ways in which CoPs which have been considered successful in providing professional development.

### 2.3.2.1 Course based cases

While one might question whether a facilitated course can be considered a true CoP, or whether it is a Learning Community, examples in the literature exhibit many of the characteristics of a CoP. The literature initially appears to provide examples of CoPs taking place within online courses for PD, but many of these CoPs are what Henri and Pudelko (2003) would categorise as a Learners' Community. Wubbles (2007) questions whether online CoPs in education are true CoPs. In clarifying the distinction between learning communities and CoPs he states that "having a participant in an online community with the explicit role of instructor or facilitator moves such a community away from an authentic community of practice" (p.228).

Brosnan and Burgess (2003) highlight the use of the conceptual framework of the learning architecture, outlined in the coda of Wenger's (1998b) book, through analysis of a twelve week online course for PD for health and social care inspectors. After considering the role which modes of belonging had played in the development of identity for the participants, they described this course as a particular type of community of practice - a learning community. The research conducted by Henderson (2007) also used the lens of Wenger's (1998b) learning architecture. This small scale design-based research study of nine teachers investigated sustained engagement by participants and concluded that, without a design which encourages engagement, increased facilitation by the lecturer is required. It appeared, from these results, that the community under study was more a facilitated learning community than a true CoP.

As a participant observer Hibbert (2008) researched an online course for teachers of reading over a period of four months. In investigating the ways in which a CoP might develop from online learning, the course provisioned a platform for discussion around what it means to be a teacher. Designed to encourage interaction and the building of a community, this course engendered a sense of trust for the participants through their shared stories and reflective practice. While it provided community focussed discussions, and exhibiting some of the characteristics of a CoP, this online course contained guidance, grading rubrics, and expectations for the participants as students, which characterised it more as a community of learning. In considering the affordances of web 2.0 tools for teacher professional development, McLoughlin (2013) discusses her study of preservice teachers making compulsory use of a Wimba Voice board for peer interactions during their practicum. While the study investigated the existence of Wenger's (1998b) mutual engagement, joint enterprise, and shared repertoire, within the discourse in this environment, it is difficult to consider this as a community of practice because of the compulsory, course bound nature of the interactions.

Some courses crossed boundaries to engage the course participants with members from CoPs outside the bounded course environment. The concept of introducing preservice teachers to a CoP before they enter the profession was used by Greene and Magliaro (2004) as they investigated the use of computer mediated communication in an educational psychology course. They observed the beginnings of LPP as the pre-service teachers engaged with both academics and in-service teachers

through online discussion around videoed classroom case studies. Mackey's (2009) research considered the professional development enabled for teachers engaged in online learning communities and collocated communities of practice through the boundaries and intersections between them. Engagement in the authentic tasks of the teachers' daily practice was brought together with their engagement in the online learning community. This provided professional development which was "a complex blending of socially constructed experiences" (p.178) in which the learner plays the central role. Blended learning is described by Mackey (2009) in terms of "the way that transparent technologies can be used to enable situated learning in social contexts" (p.179).

### 2.3.2.2 Non course based cases

Outside the domain of taught courses the literature reveals a variety of organisational groups referred to as CoPs, encompassing both collocated and online environments. These range from those which appear to have emerged organically, to modified instances deliberately instantiated by management. The literature which reports on CoPs outside the domain of education is reviewed first. The majority of these studies were of managed CoPs.

A distinction was made between CoPs and other organisational groupings in Probst and Borzillo's (2008) qualitative research. The variety of views on the manageability of CoPs present in the literature was recognised, but they described a CoP as "a specific and institutionalized type of intra-organizational network" (p.335). Their conclusions held a firm view of CoPs as tools for management. From the research which involved 57 of these types of CoPs within commercial organisations Probst and Borzillo (2008) drew five reasons for failure and ten 'commandments' of CoP success. They provided a model for CoP governance which would be of value in strongly managed CoPs.

That the role of the moderator was found to be vital within the community studied by Gray (2004), identifies it more as a modified than organic CoP. This case study of Adult Learning Council coordinators involved a facilitated online community environment yet it functioned as a community of practice on some levels. This was particularly so in the area of the enculturation of newcomers by the more experienced practitioners, and the coordinators' development of identities as practitioners. The CoPs in Hew's (2009) qualitative study were described as developing organically through the efforts of the members, yet the moderator role was also seen as important in the three online communities of web developers, nurses and literacy educators. The online environment for all three CoPs was a listserve (or group emailing list), and the moderators kept the community content, the discussion relevant, and encouraged appropriate member behaviour. Hew's study focussed on the perceived professional development which took place for the members and the determinants of community success in supporting this. Members of successful communities were supported in professional development in their decision making, professional knowledge, and sense of professional identity. The two strongest of the seven determinants of the success of the CoPs were members' willingness to share knowledge and the high quality of content in the CoPs.

Responsiveness to members' needs, having an active core group, and committed leadership were integral to the sustainability of the seven managed communities in Stuckey and Smith's (2004) study. While all seven CoPs used web based technology as part of their community environment, personal



contact was found to have played an important role in sustaining them. The ‘human aspect’ formed by the social relationships which develop in a CoP was found by Hildreth, Kimble and Wright (2000) to be the most important element in differentiating it from any other organisational grouping. In their two case studies the physical and temporal differences in a distributed community could create an enforced peripherality, but did not prevent the creation of a functional CoP. Hildreth et al. (2000) did find, however, that LPP only took place in the CoPs where members were collocated. Two international commercial organisations featured in their research where CoPs and LPP were investigated as a means to retain the ‘soft’ knowledge, which is more difficult to capture and pass on in organisations distributed in both time and distance. These CoPs developed organically, with one CoP defining itself as “self-generating and self-selected” (p.35).

### 2.3.2.3 Higher Education

CoPs in the research literature appear more often to be organic within higher education institutions, and OCoPs linking educators across institutions. CoPs and LPP were considered by Herrington and Herrington (2004) to be aspects of an apprenticeship model which could support preservice teachers in their transition to teaching. By developing the environment for an online CoP, which preservice teachers were introduced to in their last year of training, Wollongong University intended to establish a ready-made community to be in place before support was needed. The Beginning and Establishing Successful Teachers (BEST) site (A. Herrington, Herrington, Kervin, & Ferry, 2006) provided resources and multiple opportunities for collegial interaction to mitigate the isolation of beginning teachers. It used the nine characteristics of authentic environments, developed by J. Herrington and Oliver (2000), among which are ‘access to expert performances’ and ‘opportunities for articulation’ derived from work such as Lave and Wenger’s (1991). Another online environment structured with the concept of CoPs in mind was the RESULTS portal developed as a portal to support Higher Education institutions in the United Kingdom in the area of learning technology. A thorough needs analysis and consultation resulted in a portal which Dempster, Beetham, Jackson, and Richardson (2003) described as “largely owned and designed by its users” (p.113). In support of the suggestion that a CoP should evolve rather than be created Dempster (2004) stated that “the *environment* for a community of practice was created, but the *community* would need to evolve to take advantage of it” (p.100)

Environments to support OCoPs have been implemented to provide a CoP environment to educators who are not collocated. Online communities of practice for teachers, both organic and modified, have been studied, and the perceived measures of success have been varied. The purposes of the communities in the online environment developed for English school leaders by the UltraLab team, described by Ramondt (2008), were to communicate, share, discuss, and access information and resources. There was no clear definition of what Ramondt considered to be a CoP. While the groupings discussed shared a domain, committed to a group of peers, actively participated and had a sense of ownership of the community, they were all managed in some way. Ramondt offered advice and strategies for successfully managing a community in an online environment, as well as discussing the performance indicators which might be made available to community members to support the community in managing itself. Twelve factors, which influenced the sustainability of the Korean INDISCHOOL online community mixed method case study, were reported by Hur and Hara (2007). Of these factors, concerned primarily with outcomes as well as internal and external factors,

eight were found to encourage and four to discourage a sustainable community. This independent community, which was funded by teacher donation, displayed a high degree of commitment in its core of 10 member managers and 35 members who actively work for the community. An initial slow start to community development was supported through a blended approach with the provision of a face to face workshop during which attendees were encouraged to visit and participate in the community site. The internal factors of autonomy and sense of ownership of the community, and the value placed on community participation, provided the most influence on sustaining the community.

The case study of the Education Network of Ontario (Riverin, 2009; Riverin & Stacey, 2008), which covered a period of ten years, found barriers to participation similar to those noted for OCoPs within other domains; technical difficulties, a perceived lack of available time and a lack of access. Mandated involvement in an online network was also found to be unproductive. Information overload for participants, and the lack of responsiveness and relevance of the community itself, were identified as two further issues to be overcome in sustaining an online community. Riverin (2009) recommended factors which would help to sustain the community, and the blended learning which took place in the community, over an extended time. These were flexibility, responsiveness, and a face to face aspect, or the use of tools which simulated it, to engender a sense of community through the creation of bonds between members. The use of online networks to support tutors in the Open University UK was discussed by Macdonald and Hewling (2008). Similar to the participants in this present study, distance tutors at the Open University UK were distributed across physical locations, often worked part time and had little opportunity for collegial professional development. The vehicles for online communities of practice were three online opportunities for informal professional development; two types of discussion fora and a recently implemented wiki. The newly implemented wiki was seen to have potential, but there was no evidence of it having developed to a point where it could sustain a CoP. While the exact nature and organisation of the more generic forum wasn't made clear by Macdonald and Hewling, they felt it to be of less value to tutors and unable to sustain a CoP. There was a preference among tutors for the more relevant and tightly focussed opportunity which provided communication, resource sharing and collegial discussion, offered by a forum relating to the course they taught.

#### 2.3.2.4 The Inquiry Learning Forum and Tapped In

Two well known online environments, which are reported in the literature as having supported communities of practice, are the Inquiry Learning Forum and Tapped In. The Inquiry Learning Forum (ILF) was designed to provide science and mathematics teachers in Indiana with an opportunity for professional development in inquiry-based pedagogies through the ability to view, share, and discuss videos of their classroom practice. This facility was embedded as the central space within a design which mimicked a physical campus and contained areas such as the office, the library, the auditorium, the lounge and 'my desk'. Moore and Barab (2002) investigated the ability of network technologies to create a CoP for teachers and found that their initial design, while technically sound, did not provide the social capacity to facilitate community development. Modifications to the online environment were made and opportunities for face to face support were provided, to encourage teachers to engage. The Collaboratory space was added later and supported the formation of Inquiry Circles, which are sub-groups of members with a common purpose. The evolution of the design of

the ILF, and the community within it, are described by Barab, MaKinster and Scheckler (2003b) whose research “suggests that designing for virtual communities involves balancing and leveraging complex dualities from the ‘inside’ rather than applying some set of design principles from the ‘outside’” (p.237). They describe six dualities. To Wenger’s (1998b) four dualities of local / global, identification / negotiation, participation / reification and designed / emergent, they added online / face to face, and coherence / diversity. An underlying tension was described between the researchers’ intention to bring about a change in pedagogy and the teachers’ need to support their present teaching, which leads one to question whether this web supported community was a community of practice, when the practice was not shared by all members. An emphasis emerged through this paper on supporting, rather than designing, a community in its development online. Barab, MaKinster and Scheckler (2003b) state,

We have clearly been convinced that community cannot be designed a priori or by someone other than the community members. As such, our current commitments in this project are even more focused on a minimalist design through which we collaboratively develop participant structures that will initiate dialogue and then evaluate how our efforts support local adaptation and continued development (p.253).

The concept of community in the ILF is discussed in more detail by Kling and Courtright (2003) who highlight the misconceptions arising from inappropriate use of the term ‘community’ with its connotations of supportive warmth and collaboration. The ILF itself is not identified by them as a community of practice, but as “an online social formation equivalent to a drop-in center for teachers’ professional development” (p.230). The challenges inherent in trying to ‘build’ a community are discussed along with the importance of developing trust in any type of community. Technology is not seen as providing a solution, and face to face strategies are suggested as the appropriate means to engender the familiarity and trust necessary for the CoP to develop. Kling and Courtright (2003) emphasised the point that authors who don’t expose the pitfalls inherent in encouraging the development of an ideal community leave others open to unforeseen difficulties in replicating such a community. They stated that “the expectation that teachers would self-organize CoPs in the e-ILF’s virtual classrooms has not yet been realized” (p.231). The increase in smaller ‘bounded groups’ of ILF members who sought a private space for collaboration within the ILF online space was perceived as a possible solution to the lack of community development. These existing groups, which were more likely to develop familiarity and trust between members, may then have extended that trust into the wider group. Kling and Courtright concluded that IT strategies which support group development were more effective than those which attempt to lead it. The importance of understanding teachers’ offline influences was emphasised by Baek and Schwen (2006) who posited seven cultural influences which affect teachers’ participation online. Through the example of the ILF they suggested how understanding these influences might support the design of future online PD environments.

Tapped In (TI) provided an online environment for teacher professional development from 1997 until 2013. Its visual design was developed as a representation of a physical campus and contained the spaces that one might expect to find there, including an office for each individual member. The site was ‘tenanted’ by invited teacher PD professionals and organisations such as universities and associations. Schlager, Fusco and Schank (2002) described the online CoP model they had created at

that time to support sustainable community development. Individuals or groups were provided, on request, with communication spaces within the TI environment and technical support was offered by TI to enable them to effectively operate the text based tools available. A 'Help desk', weekly discussion sessions, new member orientations, newsletters and mailing lists supported members in using the site and engaging in topics of interest. While Schlager and Fusco (2003) claim to "have demonstrated through TI that it is possible for a dedicated group of people to grow an education profession CoP of thousands of members" (p.151), there is little real evidence of a true CoP. The specific practice of the community is undefined and there is little empirical evidence of the learning and change in member identity taking place. Tapped In was a comprehensive supported online environment which enabled collaboration and communication to take place over a wide variety of educational topics and might more correctly be described as a network of communities than a single CoP. Tapped In was later described by Koch and Fusco (2008) as "an online environment that supports existing, emerging and new CoPs" (p.2) which "provides the soil and water while the organizations ... bring the seeds" (p.21). In this later iteration of Tapped In, the support provided to groups wanting to use their virtual spaces followed a three phase approach. This began with the design of the online space in collaboration with the existing community, a gradual move of the community's activities into the online space, and initial training. The second phase was that of modelling and scaffolding for the community and its leadership with the support of a community developer. In the final maturing phase the community became responsible for itself.

In reflecting on the work which had taken place with their online community of educators in Tapped In, Schlager and Fusco (2003) describe eight guideposts to support the design of educational CoPs. They stated that "from a community of practice perspective, one's work and one's professional development are inextricably entwined with those with whom one works" (p.123) and considered that they may have put the proverbial cart before the horse in creating an online teacher network before using the potential of web-based technologies to support local communities of teachers.

### 2.3.2.5 Less successful online communities of practice

A project which did not develop an active online community was the FarNet project which provided an online environment for ten isolated schools in the north of New Zealand. The aim of the project was to "provide the means by which teachers could produce and then share electronic resources related to their teaching areas and engage with one another in communication around the resources" (Parr & Ward, 2006, p.776). Parr and Ward reported that many prospective members lacked both a perception of the need for this community and the recognition of an online environment as a solution to its provision. While an active community is referred to, rather than a CoP, the findings of the research consider that building community within an organisation or strengthening existing organisations may lead to more support for initiatives involving communities which span organisations. The community at the centre of Najafi and Clarke's (2008) study was of teachers involved in the Literacy Project professional development initiative. An online discussion forum was added for the existing face to face CoP and a small study of six participants took place over a period of seven months. The online discussion board was not well used in spite of a requirement for research participants to make weekly posts. Najafi and Clarke (2008) highlighted five areas which warrant consideration by those who would consider a similar implementation.

These areas encompassed teacher preferences and culture, perceived need and practical support for the initiative.

The community context, described by P. Smith, Barty and Stacey (2005), was very similar to that of this present study. This small employment and training centre intended to develop online community amongst the staff of their existing CoP, prior to the implementation of online learning opportunities. The strategy of encouraging the existing community to engage within the online space was seen by the staff planning group as a “useful way to introduce staff to using the technology” (p.3). The findings revealed two major difficulties in achieving their desired result. Too few participants had sufficient experience to enable their full participation in the desired practice and provide a learning trajectory for other community members. The participants, with few exceptions, continued to conduct their usual collegial discussions face to face, in the same way that they always had, and did not perceive a need to move their discussions online. While it was not reflected in the forum posts, management felt that gains were made in the attitude which developed towards the online environment, and that there had been “considerable gains in relevant procedural and dispositional knowledge [achieved] in a non-threatening way” (P. Smith, et al., 2005, p.4).

### 2.3.3 The gaps reported in the literature

Kirschner and Lai (2007) noted, in their introduction to the special issue on online CoPs in Education, that “very few empirical studies have been undertaken to document how CoPs work and how they can be sustained in an educational community” (p.129). Johnson’s (2001) survey of literature on online CoPs was conducted to suggest future pathways for research, as well as identifying the trends at that time. With a focus on the ability of web-based technology to enable the required community collaboration, Johnson differentiated between a designed virtual community and the CoP which emerges within it. To fill gaps found in the existing literature Johnson proposed a case study “of an emerging community of practice within the designed environment of a virtual community” (Johnson, 2001, p45-46) incorporating the development of a virtual community, the observation of an emerging CoP, and the iterative process of refining the design to improve the learning taking place. Having uncovered what they consider to be the critical elements of internet mediated CoPs, Apostolos and Alivisos (2010) suggested further research to determine at what point in the phases of an internet mediated CoP’s life cycle these elements are most influential.

While literature can be found on blended learning, and the combination of online learning communities with face to face CoPs, literature is very rare which considers a blended CoP and even rarer that which considers the professional development which takes place within it.

## 2.4 Summary

This review of the literature on professional development for educators, the application of a community of practice approach and the associated theoretical viewpoint of legitimate peripheral participation supports this present research. The need for more research into e-learning professional development in contexts other than that of higher education is highlighted and it is suggested that investigative research with a sound methodological base is required to balance the descriptive studies already available.

Research taking place in modern workplaces has suggested that full participation in a CoP is not inevitable (Handley, et al., 2007) and that LPP may require amendments for contexts which include new elements such as masters who continue to learn, and newcomers with prior experience (Fuller, et al., 2005). Modified CoPs can provide transition from the periphery to the 'core' of a community (Borzillo, et al., 2011), but not LPP as outlined by Lave and Wenger (1991; Wenger, 1998b). Returning CoP theory to its original position as a heuristic has been suggested (Lea, 2005), and will be taken up by this present research.

The findings of the literature reviewed provided an understanding of elements which can contribute to successful professional development in a CoP which incorporates an online environment. Amongst them were understanding teachers' contexts, their offline influences and culture (Baek & Schwen, 2006; Najafi & Clarke, 2008); keeping discussion and content relevant (Hew, 2009; Macdonald & Hewling, 2008); maintaining flexibility and responsiveness (Riverin, 2009); providing personal contact (Hildreth, et al., 2000; Stuckey & Smith, 2004); and including a face to face aspect (Hur & Hara, 2007; Moore & Barab, 2002; Riverin & Stacey, 2008). Barriers to the successful application of CoP theory were also highlighted through the literature. These included a perceived lack of available time and, in an online environment, a lack of access; technical difficulties; information overload for participants (Riverin & Stacey, 2008); a lack of perceived need (Najafi & Clarke, 2008; P. Smith, et al., 2005); and a lack of practical support (Najafi & Clarke, 2008).

A need for research on the provision of relevant and timely professional development, through the context of an organic, blended community of practice is suggested by the literature, and the gaps in the literature. As the literature recommends, the organic development of the blended community in this present research is supported and enhanced by technology (Barab, et al., 2003b; Dempster, 2004; Hung & Nichani, 2002; Schlager & Fusco, 2003) rather than designed through it. The development of a CoP has been seen as a growth process, sometimes organic, sometimes supported in developing through a process (Hur & Hara, 2007; Koch & Fusco, 2008). The development of the blended CoP in this present research, and the professional development taking place within it, was an ongoing process and so the research methodology chosen for this research needed to be one which aligned with this process. Design-based research is such a methodology, and its employment within this research is discussed in the next chapter.

## Chapter 3 Methodology

This research was instigated and carried out with the intention of improving the existing situation for people in a specific context. The consequences of the research for the everyday practice of those involved were as important as the theoretical findings. The theoretical findings themselves would be important because of their ability to support a better understanding of the environments in which the members of this organisation operate, as well as the possibility of extending their use to other contexts. In investigating a practical solution to the problem presented, this research fits within a pragmatic paradigm. With its roots in the thinking of William James (1842-1910) and John Dewey (1859-1952), the contextual focus of a pragmatic approach encourages the uncovering of practical solutions rather than overarching theories. Practitioner collaboration in the development of the intervention in this research was encouraged in order to facilitate a better understanding of this specific context, the practice which took place within it, and the outcomes provided by the research. "A pragmatic epistemology that regards learning theory as being collaboratively shaped by researchers and practitioners" (Reeves, 2000, p.12) is also required by design-based research, and is one of the reasons why it is a suitable methodology for this study. In this chapter the reasons behind the choice of a design-based research methodology are discussed, and the phases and cycles of the research are outlined followed by the detailing of the research methods and data analysis. The chapter goes on to explain the multiple roles of the researcher, and the considerations given to ethics, validity and reliability, before concluding with the limitations of the study.

### 3.1 Why design-based research?

"Design-based research boils down to trying to understand the world by trying to change it" (Hoadley, 2005, p.46)

This study, which investigates the ways in which an online environment supported professional development for e-learning, considers both the development of the environment through the use of educational technology and the outcomes for the community members who engaged within it. A methodology for the research was required which was able to encompass all elements of the research within a flexible framework.

The research aimed to produce not only a rich description of the intervention, but also the design principles used to create and evaluate the intervention, enabling it to be useful to other practitioners. As Reeves, Herrington, and Oliver (2004) explain, "Educational technology is a design field, and thus, our paramount research goal should be solving teaching, learning, and performance problems, and deriving design principles that can inform future development and implementation decisions" (p.62). Design-based research could support this approach through what Reeves, McKenney and Herrington (2011) described as "the twin objectives of developing creative approaches to solving human teaching, learning, and performance problems while at the same time constructing a body of design principles that can guide future development efforts" (p.55). This present research aimed to find a solution to a problem and as Reeves et al. (2011) stated, design-based research "is not 'done' until desirable results are attained, results that represent progress in solving the problems with which the research projects began" (p.59).

Underpinning the intervention in this research, and supporting the development of design principles drawn from the context of this study, was Lave and Wenger's (1991) theory of legitimate peripheral participation. The methodology chosen for the research needed to reflect this focus on theory. While theory may be perceived as an afterthought in other research approaches, (Reeves, et al., 2011), design-based research looks to theory in its initial development of interventions. In the context of this research, the theory needed to inform the practical application of this intervention to provide a 'real' solution. Design-based research has been characterized as "extended (iterative), interventionist (innovative and design-based), and theory-oriented enterprises whose "theories" do real work in practical educational contexts" (Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003, p.13), a fitting description for this present study and one which highlights the practical nature of this research.

To have a positive impact on the educational context in which this research takes place, the methodology chosen would also need to provide the facility for practical application. Bell, Hoadley and Linn (2004) indicate that, "researchers need to understand how new forms of technology can be productively embedded into larger systems of human activity ... Design-based approaches provide for such contextualization and integration of technology in educational practice" (p.76). The strong link between practice and research identified by Reeves et al. (2011) is an aspect of design-based research which could provide contextualisation and the potential for it to have an impact.

To increase the possibility of achieving these desired results, the implementation of this intervention was to be a collaborative effort by the developer and the community members at all levels of the organization. As well as increasing the likelihood of success, collaboration could increase the involvement and, to some extent, ownership of the intervention by the people involved. McKenney, Raval and Pieters (2012) suggest, from the perspective provided by their design-based research project, that the "learning gained from participating stays with the institution even after the research project concludes"(p.11). Collaboration through the adoption of a design-based research methodology in this study would also support the learning being retained in this present context.

Some of the requirements and limitations of this present research would only emerge as it took place. Bannan-Ritland and Baek (2008) explained that, "the continual redefinition of constraints and the generation of new goals in the design phase highlight how pragmatic, dynamic, and generative processes are integrated in design research" (p.299). The methodology chosen for this research needed to be broad enough to accommodate the context and the collaboration, and flexible enough to incorporate iterative cycles of development and possible changes of direction which might be necessary to create an intervention which provided a working solution.

A design-based research approach was chosen for this research to enable the development of design principles as well as the implementation of an intervention which provided a solution to the teaching and learning issue in this context. Design-based research, combining both quantitative and qualitative methods, enabled a focus on uncovering the relationships between the educational theories, the designed intervention, and the professional practice of this community. Wang and Hannafin (2005) defined design-based research as "a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to



contextually-sensitive design principles and theories” (p.6). Bereiter (2002) simply stated that “what defines design research is its purpose: sustained innovative development” (p.325). This present research also sought to provide an innovative solution which was able to be sustained by the community members within their context.

## 3.2 The phases of the research process

The intervention in this research involved a phased approach to “incrementally increase our understanding of a particular designed intervention in a particular context over time” (Hoadley, 2005, p.46). The phases of the intervention were implemented in widening stages, to facilitate a gradual increase in the tutors’ skills and encourage tutors to engage more in the practice of implementing e-learning for their clients. The final iteration of the online environment in this intervention was constructed in a way which provided the levels of access to the resources, members, and ongoing activity which were needed for a newcomer to this practice to learn from practitioners with more expertise, and become a full member of the community of practice (Lave & Wenger, 1999).

This phased intervention implementation for the ALEC fits within the “generic model for conducting design research in education” developed by McKenney and Reeves (2012). Their model (see Figure 1) displays the implementation and spread of an innovation, as well as the three core phases of design research: Analysis / Exploration, Design / Construction and Evaluation / Reflection. This leads to both theoretical understanding and a maturing intervention. Within this flexible process, iterative cycles take place at micro level for their three core phases, meso level for a combination of micro-cycles, and macro level for the whole research (McKenney & Reeves, 2012) (see Figure 2).

The original design of this present research was developed in a similar pattern, following the phases of Bannan-Ritland’s (2003) Integrative Learning Design Framework: Informed Exploration, Enactment, Evaluation - local impact, and Evaluation - broader impact, and Publication. Exploration comprises clearly identifying the problem, reviewing the literature, and focussing on the requirements of a specific context. Enactment includes the design and implementation of the intervention, and improvements developed during this process. Evaluation of the intervention for Bannan-Ritland took place in two stages. Only the first of these, which considered the local context, was undertaken in this research. The final stage, which required an evaluation of the impact of the intervention beyond the local context, was outside the scope of this study.

The overview of this present research (see Figure 3) shows the macro-cycle of the whole research with its three phases of Exploration, Enactment and Evaluation, and indicates the four meso-cycles, two of which take place within the Enactment phase. These meso-cycles incorporate micro cycles of Analysis / Exploration, Design / Construction or Evaluation / Reflection. An overview of the activities and methods used in each meso-cycle is included for clarity (see Figure 4) and the methods themselves are discussed in more detail in section 3.5. The cycles which are most difficult to illustrate are the multitude of still smaller iterative cycles of design, implementation, evaluation and redesign which take place for changes and adjustments implemented throughout the research, mostly during the Design / Construction micro-cycles. “The partnerships and iteration typical of design-based research ... result in increasing alignment of theory, design, practice, and measurement over time” (Design-Based Research Collective, 2003, p.7), and these smaller iterative cycles underpin

the collaboration of researcher and practitioners in the development of the intervention at the centre of this research.

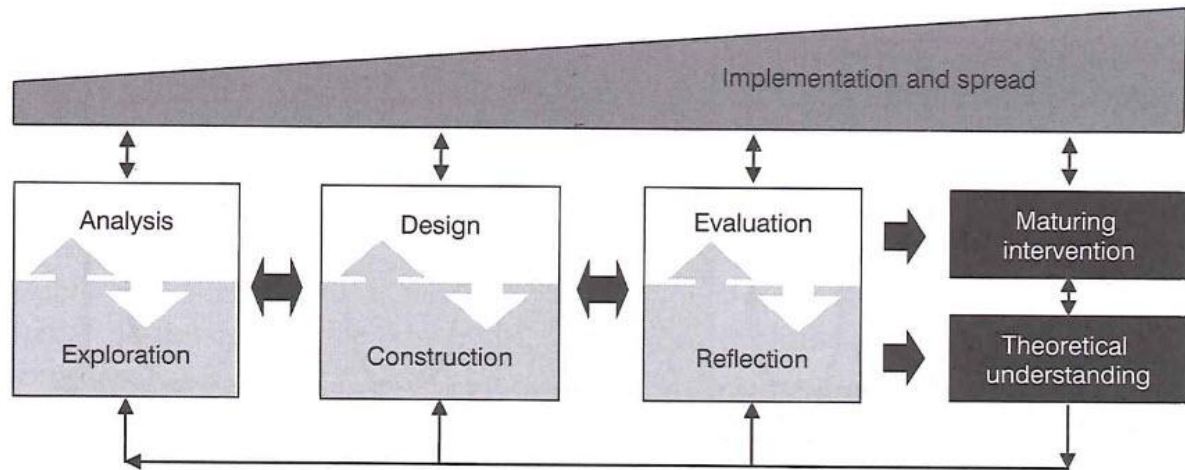


Figure 1: Generic model for conducting design research in education.

From "Conducting educational design research." by S. McKenney and T. Reeves, 2012, p. 77.

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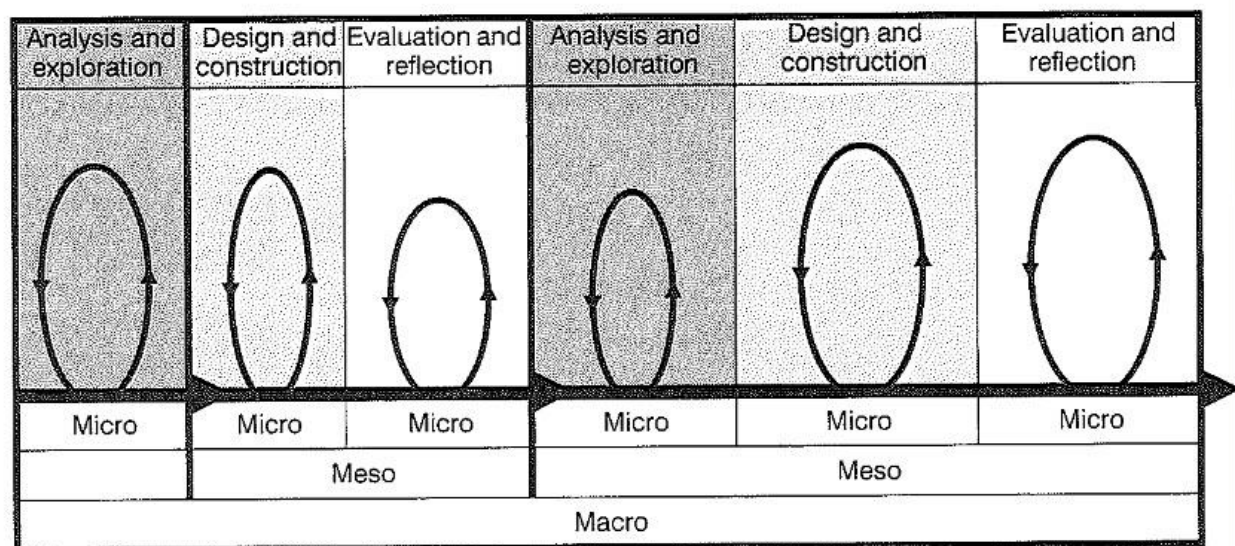


Figure 2: Micro-, meso-, and macro-cycles in educational design research.

From "Conducting educational design research." by S. McKenney and T. Reeves, 2012, p. 78.

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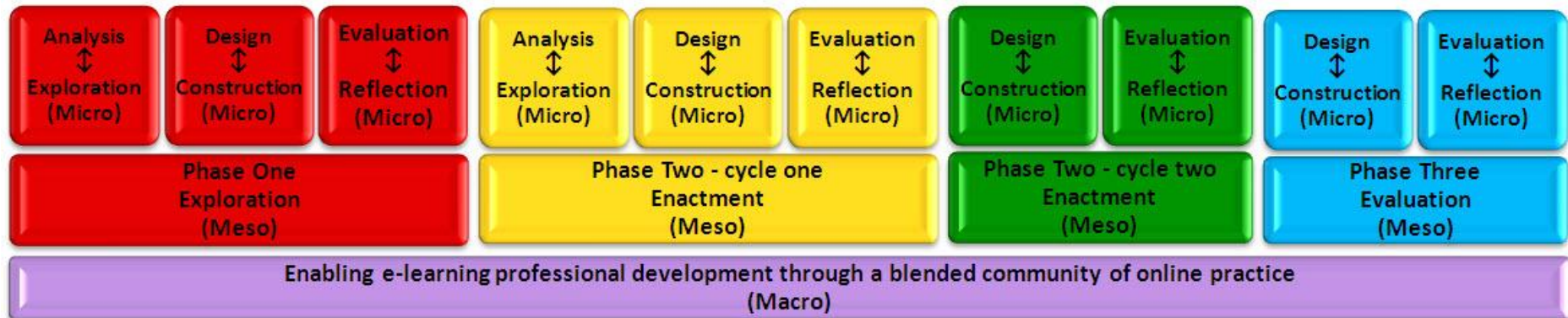


Figure 3: The macro-cycle of this design-based research showing the three phases, involving four meso-cycles and ten micro-cycles

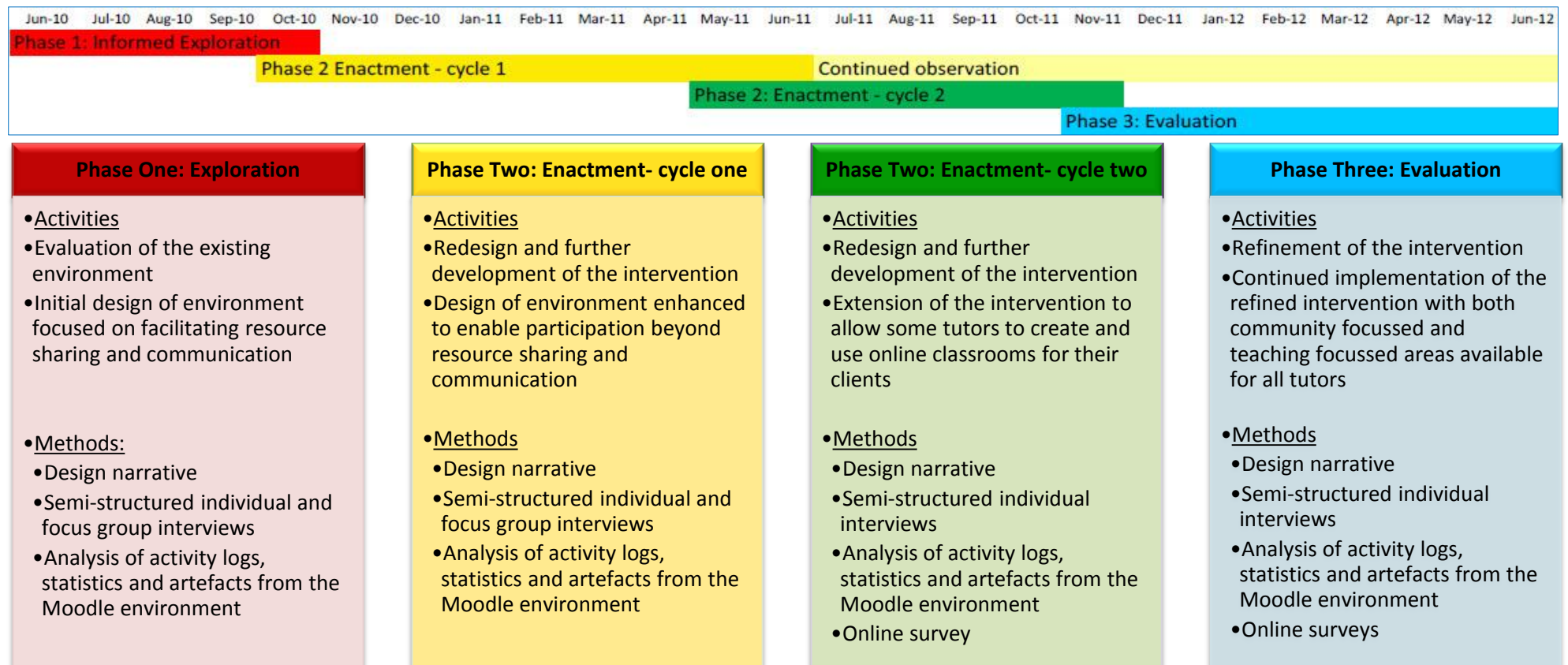


Figure 4: Timeline, main activities and methods used for each meso-cycle of the research process

### 3.2.1 Phase One: Exploration - Analysis and initial design

The research began in this Exploration phase with a broad initial literature review, comprising the major areas of professional development for educators and communities of practice. During this phase of the research the theoretical framework for this study was first established, drawing on theories in which communities educated their own members and encouraged them to master the community's practice. Lave and Wenger's analytical perspective of legitimate peripheral participation was chosen as a lens through which to view the community and the learning which took place within the developing intervention.

A detailed formative evaluation of the existing environment was undertaken, with data being gathered from both the environment and the participants. This data was then drawn together thematically and analysed to produce categories. All this information, detailed in section 4.1, was interrogated alongside the developer's design narrative and information gathered from the review of the literature. It was then synthesised to provide indications of the ways in which the online environment had provided solutions to the initial problem. As well as contributing to the findings of this research, the data was used to further refine and develop the online environment for the ALEC community of practice. Information provided by this first phase of the design-based research resulted in immediate improvement and expansion of the online environment.

### 3.2.2 Phase Two: Enactment - Redesign and further development

This second phase of the research, Enactment, took place in two meso-cycles; the first meso-cycle focussed on enhancing the pre-existing online environment within which the ALEC community could operate as they became a blended community of online practice (BCoOP). The second meso-cycle focussed on extending the environment to include online classrooms for the tutors and their clients. These meso-cycles encompass the redesign and further development of the intervention through the micro-cycles of Analysis / Exploration, Design / Construction and Evaluation / Reflection and the smaller iterative cycles of design, enactment and evaluation, leading to refinements.

#### 3.2.2.1 Meso-cycle One – The community spaces

Using the findings from the Phase One data, current theoretical understandings, and an update of the literature review, the online environment was enhanced to encourage further communication and resource sharing as well as the sharing of teaching practice. Observations were made and data was gathered to study the ways in which the enhanced environment had supported the development of a BCoOP, and to distil design principles and guidelines. Observations, along with the developer's design narrative; interviews with tutors, the office administrator and management; and analysis of the online logs, statistics and documentation produced were used to study the ALEC community interaction with the intervention, and its effectiveness in facilitating community participation in the online environment.

Meso-cycle one involved an update of the literature review and the narrowing of its scope to focus on the areas of online communities of practice for educators' informal professional development and professional development for e-learning. The findings of Phase One were incorporated into the enhancements made at the beginning of this meso-cycle, and refined through micro-cycles. During



this cycle the intervention was studied for its ability to enhance the developing online practice of the participants, focussing on enabling productive communication and collaboration, as well as the use of the environment for tutor professional development. Throughout Phase Two meso-cycle one where information gathered, or feedback from community members, indicated possible improvements to the online environment, changes were made and observed for indications of acceptance or adverse reactions by either individual members or the community as a whole.

In addition to the data gathering methods in Phase One, this meso-cycle used a forum tool made available within the Moodle site to give tutors the ability to provide continual feedback on the environment as they used it, thus increasing the ability of the research to develop the intervention through the iterative cycles. Data was collected twice during this meso-cycle which overlapped successive meso-cycles. Formative collection and analysis of data took place at the end of June 2011, but this community focussed area of the online environment was kept under observation until data collection ceased in July 2012 (See Figure 4).

The findings from both Phase One and Phase Two meso-cycle one are recorded in detail in section 4.1. The formative and summative data gathered on this community focussed area of the online environment, the systematic documentation, and the artefacts produced during these meso-cycles of the research, were synthesised to form the design principles discussed in section 8.1 of this thesis. These design principles are encapsulated within a matrix of strategies for enabling and supporting the development of a blended community of online practice, which is the first instrument developed from the findings of this study.

### 3.2.2.2 Meso-cycle Two – The online classrooms

The second meso-cycle of this Enactment phase of the research extended the online environment to provide the ability for tutors to expand their use of e-learning. Following an update of the literature review, with a continued focus on the areas of online communities of practice for educators' informal professional development and professional development for e-learning, the online environment was extended to include examples of online classrooms and resources to support the development of tutor created online classrooms. Details of these developments are recorded in section 5.1. Online classroom spaces were provided for three tutors to use with their clients and data was gathered on their first six months of developing and using the online classrooms. During this meso-cycle observations and regular contact with the tutors and management produced several iterative cycles which further refined the intervention. The collection of data for this meso-cycle began in May 2011 and overlapped cycle one until data collection ended in November 2011.

Data gathered from cycle two and the updated literature review were used to identify further modifications which might increase the ability of the site to support professional development in e-learning for additional tutors in the next phase, Evaluation.

### 3.2.3 Phase Three: Evaluation

In Phase Three of the research, Evaluation, the opportunity to use the online environment for e-learning by developing an online classroom, was extended to the remainder of the ALEC tutors. Iterative cycles of design, enactment and evaluation were undertaken in this phase as each new tutor chose to undertake the development of an online classroom. These cycles also continued to

take place for the further development of the classroom focussed areas of the intervention as a whole. The collection of data for this meso-cycle began in November 2011 and ended in July 2012. The data gathered from Phase Three, and a further update of the literature review, were used to identify final modifications to the intervention. The findings of this phase relating to the newly engaged tutors are recorded in detail in sections 5.2 and 5.3. Summative data was gathered using similar methods as those already described, and retrospective analysis of all data gathered drew this phase of the research to a close.

The formative and summative data gathered on this online classroom focussed area of the intervention, the systematic documentation, and the artefacts produced during last two meso-cycles of the research were synthesised to develop the second instrument developed from the findings of this study. This second instrument, a heuristic model to guide the investigation of the learning taking place within the online aspect of a blended community of online practice, is discussed in section 8.2.

### 3.2.4 Publication

The fourth and final phase, as described in Bannan-Ritland's (2003) Integrative Learning Design Framework is that of Publication. Reeves, Herrington and Oliver (2005) have some sound advice on the dissemination of design-based research which includes the suggestion to "present in-progress reports of their design research initiatives at general international conferences" (p.109). Publication happened frequently throughout this research. The interim results, as they were produced, were disseminated through conferences. The completion of this doctoral thesis comprises the next publication opportunity, and it is hoped that there will be journal publications to follow. The development and use of the intervention by the community itself still continues and there may be future opportunities for both research and publication.

Existing publications are:

- Tull, S. (2010). E-learning professional development within an online community of practice for adult educators. In N. Dabner, S. Bailey, J. Johnson & N. Davis (Eds.), *Ulearn 10 - Research Stream, 2010* (pp. 66-70). Christchurch, New Zealand: University of Canterbury.
- Tull, S. (2011a). Online community engagement through simplicity, relevance and connection. In G. Williams, P. Statham, N. Brown & B. Cleland (Eds.), *Changing Demands, Changing Directions. Proceedings ascilite Hobart 2011*, (pp. 1250-1254). Retrieved from <http://www.leishman-associates.com.au/ascilite2011/downloads/papers/Tull-concise.pdf>
- Tull, S. (2011b). Spirals of design: Design based research in e-learning professional development. In J. Mackey, N. Dabner, J. Johnson & N. Davis (Eds.), *Proceedings of ULearn 11 - Research Stream, Rotorua 2011* (pp. 77-85). Retrieved from [http://events.core-ed.org/sites/events.core-ed.org/files/Ulearn11\\_Research\\_Proceedings\\_web.pdf](http://events.core-ed.org/sites/events.core-ed.org/files/Ulearn11_Research_Proceedings_web.pdf)
- Tull, S. (2012). A matrix for sustainable online community development. In. *Future Challenges, Sustainable Futures Proceedings ascilite Wellington 2012*, (pp. 936-938). Retrieved from [http://www.ascilite.org/conferences/Wellington12/2012/images/custom/tull%2c\\_susan\\_-\\_a\\_matrix.pdf](http://www.ascilite.org/conferences/Wellington12/2012/images/custom/tull%2c_susan_-_a_matrix.pdf)
- Tull, S. (2013, December). Examining blended community online – a model *Electronic poster presented at Electric Dreams: 30th Annual Ascilite Conference, Sydney* Retrieved from <http://prezi.com/so39ovq3yl8w/examining-blended-community-online-a-model/>

- Tull, S. (2014). Investigating e-learning professional development within a blended community of online practice. In *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications, 2014* (pp. 1939-1945). Chesapeake, VA: AACE. Retrieved from <http://www.editlib.org/p/147740/>

### 3.3 The multiple roles of the researcher

During this study the researcher played the multiple roles of researcher, intervention designer, developer, and technical support person. As the research progressed, so too the role of the researcher was transformed through what Cohen, Manion and Morrison (2007) refer to as “the four roles typically cited for observers” (p.179) in naturalistic research: complete participant, participant as observer, observer as participant and detached observer. There was a constantly changing balance between involvement in the community and distance for observation, and care was taken to ensure that the roles other than researcher would become less and less necessary as the study progressed and the participants developed their own understanding of the environment, how it worked, and what they were able to do within it.

The initial role of ‘complete participant’ involved the researcher as designer and developer of the online environment, and the person who introduced the ALEC staff to the online environment. Within the thesis the researcher, in this role, is referred to as ‘the developer’. The initial development of the collaborative design was completely the work of the researcher, because there was no one within the organisation with the expertise to develop it. Technical support and information about the use of the online environment was provided when the community first began to use the online space. The researcher’s role became a more distant ‘participant as observer’ when the ALEC staff required less support and began to develop the environment themselves. The developer’s role became one of an experienced practitioner in the online environment who was available to support and to provide assistance if the community members were unable to resolve issues themselves. Documentation, and referrals to other community members, began to replace the more personal support which had initially been provided. Once the research began to focus on the online classrooms the researcher became ‘observer as participant’ providing the technical support and documentation and examples as guidance, with very occasional personal assistance. Finally, in the evaluation phase of the research, the researcher became ‘detached observer’. The other roles decreased to the point where, as part of the researcher’s strategy for withdrawing from the field of study, all responsibility for the online environment was handed over to community members at the close of the research.

Emotional involvement was expected to be minimal in this research, except for maintaining positive relations with the participants. However, the shared experiences, particularly throughout the major earthquakes which occurred during the research, made the researcher feel as though she was part of the community. Discussions and interactions outside the formal research as well as situations such as being invited to the 2011 Christmas celebration and receiving a gift alongside other staff members, indicated the mutuality of this feeling.

At all times the researcher strove to maintain a research view independent of other roles. The design narrative was the most effective tool in providing a record of events from the perspective of those roles other than researcher. It provided the opportunity to differentiate the thoughts and

perceptions of the designer, the actions of the developer and technical support person, as well as a record of interactions with the participants in these roles. Acting on this as a separate piece of data allowed the researcher to identify interactions with participants solely as a researcher and maintain a more objective perspective.

### 3.4 Research participants

Research participants were recruited at the beginning of each of the first three meso-cycles, following the granting of ethical approval by the University of Canterbury Educational Research Human Ethics Committee. An overview of the participants who took part in each phase, and the data which was collected concerning their participation, is displayed in Table 1. More detailed information about the participants is included at the beginning of the appropriate sections of the thesis.

For the Exploration phase participants were recruited from the twenty staff employed at ALEC. Nineteen people gave their informed consent and took part. One of these participants left the organisation before the end of Phase One.

At the beginning of the Enactment phase these eighteen ALEC staff members, as well as the one person who had not returned a consent form for Phase One, gave their informed consent and all staff employed by ALEC continued their participation through to the end of the data gathering for this research. Before the end of this phase, four further staff members had left the organisation and could not continue their participation.

At the beginning of Phase Two meso-cycle two, participants were recruited for the online classroom focussed aspect of the research. Three tutors gave their informed consent and participated through to the end of the data gathering for this aspect of the research. In Phase Three of the research additional participants were recruited from all the tutors who expressed an interest in developing an online classroom for their clients and who had the technology infrastructure available to them in their teaching venues. These tutors were approached for recruitment as participants when they chose to begin the development of their online classroom. All tutors gave their informed consent and participated through to the end of the research. A total of seven tutors gave their informed consent for the online classroom focussed aspects of the research.





## 3.5 Research Methods

Design-based research can incorporate both qualitative and quantitative methods, and the credibility of the research can be increased by utilizing a mixture of methods. This flexible methodology may also require changes in data collection methods as the research progresses, and “methods vary during different phases as new needs and issues emerge and the focus of the research evolves” (Wang & Hannafin, 2005, p.8). Data for this present research was gathered from a variety of sources to strengthen the validity of the findings, and several data collection methods were employed. These methods and the data collected are detailed in the following sections.

### 3.5.1 Interviews

Interviews took place in each meso-cycle of the research. A semi-structured interview format was chosen to allow the flexibility for participants to provide the data to create the rich description which would better inform the research. Seidman (as cited in Dilley, 2004) explained that “interviewing allows us to put behavior in context and provides access to understanding their [participants’] action” (p.129). It is the context provided by the interview data which decreases the likelihood of misinterpreting the actions observed in other data. While the data available in the online environment provided a record of the participants’ actions online, the likelihood of its accurate interpretation was increased by the information gathered in interviews.

In Phase One individual interviews were held with the centre manager and with three of the four tutors with special responsibilities; the lead tutors for the At-Base and the Community groups and the Resource tutor. The Workplace lead tutor was unable to attend an individual interview, but joined one of the five group interviews which were conducted. Fourteen other participants took part in group interviews focussed on the work teams that they belonged to: At-Base, Workplace, Community or Resource Development (called Writers). Interviews with participants, averaging 30 minutes in length, were conducted at the ALEC facilities between 4 and 18 October 2010, early in term three of the teaching year. One participant had retired from teaching during this phase of the research, and was not interviewed.

The interviews were video recorded to help distinguish between speakers. After transcription, recordings were converted to audio files for storage and the original video recordings were deleted. Copies of interview transcripts were made available to the participants by email for member checking, to allow participants to acknowledge the accuracy of their transcript. The NVivo qualitative analysis software package (QSR International Pty Ltd) was used to store and organise the interview transcripts.

The interviews and the collection of data from the site were all initially planned to take place within a single week late in September 2010. The researcher felt that the interviews might influence the participants’ behaviour within the site in a way similar to the Hawthorne effect, which Brown (1992) states “refers to the fact that any intervention tends to have positive effects merely because of the attention of the experimental team on the subject’s welfare” (p.163). However, due to the disruption caused by a major earthquake, the interviews instead took place over a two week period in October. During the intervening weeks participants’ online behaviour changed because of activities related to a rescheduled Resource professional development day. Because the participants

also spoke about the Resource professional development day and associated discussions so often in their interviews, a decision was made to include data from October as part of this first phase.

In the first meso-cycle of Phase Two interviews were held with all remaining participants. Individual interviews were conducted with the centre manager, the office administrator and with the At-Base, Community and Workplace lead tutors. Organising the intended group interviews with the eight other participants became very problematic and so interviews were conducted with three groups of two tutors, and two further individual interviews. Site data was used to group the participants according to the amount and type of activity they had engaged in within the online environment. Every attempt was made to interview participants with similar levels of involvement, to gather information on the individual contexts of participants who were exhibiting similar online behaviours. However this was not always possible because of participant availability. The participant interview groupings were:

- Group A: Two tutors who had high average site access and had participated actively, one Community and one Workplace
- Group B: Two Community tutors with low average site access and no active participation
- Group C: Two At-Base tutors
- Individual interviews with two further Community tutors who were not able to attend group interviews, both had high average site access one actively participated, one did not actively participate

These interviews, averaging 30 minutes in length, were conducted between 19 July and 10 August 2011, over the transition from term two to term three of the teaching year. The Resource tutor and two other tutors were unable to attend any interviews. A further three participants were not interviewed; one Workplace tutor had resigned during this time, and the disestablishment of the Resource Development Group had ended the employment of the two tutors who worked solely in that team.

The interview schedule was reviewed by fellow doctoral candidates and improved through their feedback. The interviews were video recorded to help in identifying the speakers. After transcription the recordings were converted to audio files for storage and the originals were deleted. Transcripts of the interviews were made available privately to the participants within the Research Space of the online environment, and a tool for feedback was put in place to allow participants to acknowledge the accuracy of their transcript online.

To increase the opportunities for the interviews to capture each participant's personal perspective and context, all interviews conducted as the research moved into the online classroom focussed phases were individual semi-structured interviews. Interviews were conducted with the three At-Base tutors who had developed online classrooms for their clients, at the end of Phase Two meso-cycle two on 16th November 2011. This interview gathered information on their progress, their view of the development of an online classroom for their clients, and an indication of ways in which they had felt supported in the first six months of this online aspect of e-learning in their teaching practice.

A final set of interviews was conducted just prior to the researcher withdrawing from the field of study. This second set of individual semi-structured interviews conducted with the three At-Base tutors gathered information on their experiences of developments over the second six months of using an online classroom for e-learning, as well as their perspective on teaching within this shared online community environment. Interviews were conducted with three other participants, two community tutors and one workplace tutor, who had begun development of online classrooms but had not completed them, nor given their students access to them during this evaluation meso-cycle. The ALEC manager and the office administrator were also interviewed to gather information on their unique perspectives on the developments within the organisation. These interviews were conducted on 16 May and 23 May 2012. The transcripts of the interviews were emailed to the participants to be member checked for accuracy.

### 3.5.2 Data from the online environment

The online environment was created using a Moodle learning management system. This provided the researcher with access to several sets of data. An overview of the data from the online environment which informed the research can be seen in Table 2. The interface provided three main sources of data: screen shots taken of the developed environment, participant posts within the forums, and information provided by the participants within site tools such as 'feedback' and 'choice' questions. Behind the interface, information on participants' activities was available in the form of site data logs. These logs recorded information whenever a participant accessed an area of the site, or a resource or activity within an area. Reports of logs were generated in several formats, providing the ability to view data on total participant logins to the site over the length of the research; to record participant activity which took place in the different areas of the site; and to follow each participant's activities within the site. The data of individuals' activity was also used to group the participants, according to the amount and type of use they made of the Moodle site, for group interviews at the end of Phase Two meso-cycle two.

**Table 2: Overview of data gathered from the online environment which informed the research. (The shaded areas indicated the data which was collected.)**

	Phase One 6/10 – 11/10	Phase Two.1 11/10- 6/11	Phase Two.2 5/11 – 11/11	Phase Three 11/11 – 7/12
Site login records				
"Tutors Only" logs				
Forum activity				
Forum posts				
Individual participant logs				
Research Space responses				
Demo classroom logs				
Online classroom logs				

Statistics and logs from the Moodle site were downloaded as spreadsheets and processed using SAP® Crystal Reports software to aggregate the information into weekly data sets, which made the volume of data more manageable. This data was then exported into Microsoft Excel® spreadsheets. Using the spreadsheet tools, graphs were created which displayed the information in a variety of ways to highlight particular findings. The tool Social Networking Applied Pedagogical Principles (SNAPP) was used to gather data from the participant activity within the forums in the site. Bakharia, Heathcote, and Dawson (2009) explain that the resulting “social network visualisations provide a snapshot of who is communicating with whom and to what level” (p.1). This data was extracted from SNAPP, pseudonyms were substituted, and the data was re-displayed graphically using NetDraw (Borgatti, 2002) to show the participation and relations within each forum.

Data was gathered from the ‘Research Space’; an area added to the online environment in February 2011 as both a means for the researcher to communicate with participants and a space to share the outputs of the research. The researcher explained

I have added a research space in the ‘Working Groups’ category. I’m using the ‘groups’ functionality to allow tutors to see the transcripts of just their interviews, and I’ve added a forum for them to give me feedback. I’m going to display the outputs of my research here so that they will have access to them, and I can use this space to show the tutors some of the functionality that will be available to them within their own teaching spaces e.g. Groups, choice activities, and displaying web content like Prezi. (Design narrative, 8/2/11)

While a forum was made available to all participants within the Research Space to allow them to provide feedback and comments to the researcher, the only post made in this forum was a general comment on the use of e-learning which was made at the end of Phase Three. Three other opportunities for participants to contribute information were provided within the Research Space. Two single question surveys six months apart, using the Moodle ‘Choice’ tool, gauged tutors’ perceived level of adoption of the online environment. A final survey was conducted in the Research Space using a Moodle ‘Feedback’ tool. The survey enabled participants to give their feedback on the idea of using a Moodle classroom for e-learning for their clients. This survey was completed by all but one of the tutors who had participated in any phase of the research.

### 3.5.3 Design narrative

The design of the online environment and the story of its development were an integral part of the research. The design narrative, written in a diary form by the researcher in her role as designer, tells the story of the intervention, its design and implementation within the ALEC context. “Design-based researchers must not only document their perspective or starting point, but must also document any plausibly relevant interventional strategies used not only by participants observed, but also by the researcher herself or himself” (Hoadley, 2004, p.205). This design narrative recorded the events and circumstances surrounding changes, both successes and failures, helping to distinguish intentional changes from accidental ones. It was most informative in revealing the smaller cycles of design, enactment and evaluation which took place within the design and development of the site during the research. Throughout the research phases the design narrative continued to provide contextual

information on the development of the intervention and the designer/developer's interactions with the organisation. This included the resources provided for online classroom development as well as the individual tutor's development of their online classroom. The design narrative also helped to "meet the challenge of replicability by adequately describing research contexts" (Bell, et al., 2004, p.79). By providing a unique designer perspective on events, the narrative helped to determine whether the data generated by other methods was adequate in capturing the results of the intervention implementation.

In recognising that there are some limitations related to the multiple roles this researcher plays as the sole intervention designer, developer, technical support person, and researcher, the design narrative helped to clarify the designer/developer view as distinct from the other aspects of this researcher's roles. As Bell, Hoadley and Linn (2004) suggested, a design narrative "can help make explicit some of the implicit knowledge the designer or research partnerships used to understand and implement the intervention" (p.79). Included in the design narrative were the 'why' as well as the 'what', information which may support generalisation and an understanding of whether similar decisions would be appropriate in other contexts. The addition of this design narrative enhanced the understanding of the research context, increasing the opportunity for others to consider how the results of this study might inform their own context, and the possibility of replicable results in a very similar context.

## 3.6 Data Analysis

As Creswell (2012) states, "There is no single, accepted approach to analysing qualitative data... it is an eclectic process" (p.238). The process of data analysis within this study involved a combination of a general inductive approach to analysis of data, and a template analysis approach. King (2004) suggests, and this researcher concurs, that "the discipline of producing the template forces the researcher to take a well-structured approach to handling the data, which can be a great help in producing a clear, organised, final account of the study" (p.268)

### 3.6.1 Phase One data analysis

In Phase One during the evaluation of the initial online environment design, transcriptions of participant interviews were annotated to highlight units of data which provided insights into the participant view of the intervention. These insights were developed into initial analysis codes inductively from the researcher's immersion in the interview data. The codes were then grouped into categories within three themes arising from the data itself and the analytical perspectives employed in the research, namely environment design and development, communities of practice, and legitimate peripheral participation.

A template analysis approach was then applied to both the developer's design narrative and the interview transcripts. The template included redeveloped initial codes, with codes relating to the theoretical lenses of legitimate peripheral participation and communities of practice. This highlighted data which evidenced these constructs, and identified any of the elements which were not present in the data. All the template codes were defined and included descriptions and examples (see Appendix B: Phase One coding template).

These template documents, along with selected passages of interview transcripts, were shared with doctoral candidate colleagues to check for the reliability of the researcher's coding through inter-rater reliability (King, 2004). Applying this peer reviewed template to analyse the data helped to ensure consistent coding. Coded data was entered into the NVivo qualitative analysis software package (QSR International Pty Ltd) for the organisation of units of data by code. Data within each code was analysed further and re-coded into between two and six sub-codes for each code. Quantitative data such as the logs of participants' activities within the online environment were drawn upon to verify, or otherwise, the findings from the interview and design narrative data analyses. The themes drawn from the data ran across the coding categories and provided a framework within which the findings of this first phase of the research could be reported.

### 3.6.2 Phase Two and Three data analysis

In Phase Two meso-cycle one the interview data was again initially coded inductively to develop codes and themes which arose from the context and the experiences of the participants. A total of twenty four codes were drawn together under the six categories; simplicity, relevance, connection, value added, leadership and earthquakes.

Crabtree and Miller (1992) explain that "a preliminary codebook often is based on an initial conceptual model and / or a literature review" (p.99). The categories drawn from the data of this phase of the research were similar to those uncovered by Barbara Stuckey (2007) in her doctoral thesis on online communities. The basis of the template for the analysis of the data from this phase of the research was formed by the meta analysis framework of guidelines and principles within Stuckey's (2004) paper on 'good advice'. The codes which had been developed from the interview data were combined with codes drawn from Stuckey's framework to create the template for the re-analysis of the data from interviews and the design narrative. King (2004) points out that "in qualitative template analysis, the initial template is applied in order to analyse text through the process of coding, but is itself revised in the light of the ongoing analysis" (p.259). In this phase of the research, the data helped to refine the template and the template supported the development of a matrix of strategies. The findings of this analysis and the matrix of strategies are reported in section 8.1.

In Phase Two meso-cycle two and Phase Three, data analysis was focussed on uncovering information about the ways in which the online environment had supported the tutors' professional development as they developed online classrooms for their clients. Crabtree and Miller (1992) indicated that "deciding on a particular analytical approach depends on the goals of the analysis and the stage of the research" (p.93), and the goals here were different. Analysis of the data began with sorting through the raw data to find a coherent way in which to tell the story of each participant's experience in engaging with the online environment at this level of use. The quantitative data drawn from the environment itself was used more extensively to both support and verify the participants' stories. These descriptions are reported in sections 5.2 and 5.3. Following the creation of clear descriptions of the participants' experiences, further analysis was conducted using a template analysis approach. The template for analysis at this stage was developed from major ideas in the guiding theoretical text, Lave and Wenger's (1991) *Situated learning: Legitimate peripheral participation* (see Appendix C: Phase Three coding template). Data was coded using this template to investigate the extent to which this theoretical perspective was indicated within the ALEC context.



Crabtree and Miller (1992) emphasise that “while this process seems linear, the analyst must recall that constructivist inquiry is an iterative process, requiring continual interaction between collection and analysis of data” (p.97). In line with this iterative process, the coded data fed into the refining of the template, and the template led to the development of a model. The findings of this analysis and the model are reported in section 8.2.

## **3.7 Ethical Considerations**

Adhering to the five core principles outlined by Davidson and Tolich (1999) helped to ensure ethical conduct by the researcher within the research. These principles recommend that a researcher: do no harm, ensure voluntary participation, preserve anonymity and confidentiality, avoid deceit, and analyse and report data faithfully (p.376). They were carefully considered both in the research and in the three applications to the University of Canterbury’s Educational Research Human Ethics Committee for ethical approval. Ethical approval was applied for and granted for Phase One on 9 June 2010 (See Appendix D), for Phase Two cycle one on 11 October 2010 (See Appendix E) and for Phase Two cycle two and Phase Three on 30 March 2011 (See Appendix F). There were three main ethical concerns which are discussed in the following three sections.

### **3.7.1 Participant safety**

The primary researcher responsibility was to safeguard the research participants. As one writer stresses to researchers, “Our exposures and representations have consequences that are not so readily undone” (Tamas, 2009, p.613). Care was taken to be sensitive to potential areas of discovery which might make participants uncomfortable, embarrass them or hurt them in any way. To this end it was important that the implementation of the intervention was a positive experience and did not disadvantage any of the participants. Since the communication within the online environment took place through asynchronous communication and participants’ communications were used for data analysis, participants were informed that their communications would become part of the research data. Their permission was a prerequisite to the use of these communications within this research.

### **3.7.2 Voluntary participation**

As researcher and designer of an aspect of the participants’ work environment, care was taken to avoid any form of coercion. Members of the ALEC community were assured that their participation in this research was purely voluntary, and that any choice not to participate in the research, or to withdraw from it at a later time, would not in any way affect their work conditions or the support they received during this study. Potential participants were provided with an introductory letter outlining the research topic, how the research was to be conducted, and the expectations of them as a participant within it. Different consent forms were provided for the ALEC governing body, the manager, and the employed staff. These consent forms provided clear statements which made every effort to ensure that participants clearly understood what their participation would entail, that their participation was voluntary and that they were free to withdraw from the research at any time without prejudice.

### **3.7.3 Confidentiality and anonymity**

As participants were assured in the information provided to them, the data collected and processed remained confidential both during and after the research, and has been stored securely with access



to it restricted. Kanuka and Anderson (2008) point out that for data kept on an internet server, “assurances for privacy, confidentiality, and anonymity cannot be provided by the researcher to the research participants as compared to paper documents that are kept securely under lock and key” (p.10). Data collected during interviews, and distilled from the raw data available in the online environment has been stored on a password protected non-networked computer, and on a portable back-up drive kept in a locked facility.

The researcher’s concern was that the individual participants might be identified. The small size of the organisation from which the participants volunteered meant that other members of the community became aware of their involvement in the research. All members of the organisation participated in the research and most participants were very open with each other about being participants in this research. The complete anonymity of participants cannot now be guaranteed within the organisation. Some data is available within the online environment, and tutors can view the contributions of other participants. Group interviews allowed participants to hear each other’s responses and those quoted might be recognised by other participants.

In an effort to protect the identity of the participants in this study as much as possible, pseudonyms were used for participants and institutions at all stages of the data collection, analysis, writing and dissemination, and the researcher is the only person to hold any identifying information. The major earthquakes which took place during this research could not be excluded from the data, and have enabled the identification of the research as having taken place in the Christchurch region. In balancing ethical considerations with the necessity of rich description in establishing the context for this study, care was taken not to reveal any unnecessary identifying information. As questions of ethical behaviour arose in this flexible research methodology involving the online environment, the researcher looked to the advice of Kanuka and Anderson (2008) who suggested that, “in everyday situations that are crucial to ethical work, ... strive to be receptive and perceptive and struggle to act ethically in each situation” (p.12). This advice was heeded throughout the data collection, analysis and reporting of this research.

### 3.8 Validity and reliability

While design-based research is well suited to the complex, real-world nature of this educational setting, care was needed to ensure that the research findings were both valid and reliable. As Barab and Squire (2004) indicated, “one challenging component of doing educational research on design-based interventions is to characterise the complexity, fragility, messiness, and eventual solidity of the design and doing so in a way that will be valuable to others” (p.4). Cohen, Manion and Morrison suggest that “validity might be addressed through the honesty, depth, richness and scope of the data achieved, the participants approached, the extent of the triangulation and the disinterestedness or objectivity of the researcher” (Cohen, et al., 2007, p.133). Where possible, all of these approaches were used to ensure both validity and reliability.

The nature of design-based research itself promotes several validity procedures. The length of time spent with the participants in the field designing, developing and evaluating the intervention at the centre of this research was two years. During this time the researcher was able to build trust and mutual respect which helped to develop rapport with the participants. The prolonged engagement in the field allowed the researcher to solidify evidence by providing the opportunity to “compare

interview data with observational data ... [and] better the understanding of the context of participant views" (Creswell & Miller, 2000, p.128).

The collaboration which took place, particularly in the early design and development phases of the intervention, increased the ability of the researcher to perceive the participants' views and to develop relationships which encouraged the participants to be more open in their responses to the researcher. Wang and Hannafin (2005) cautioned that, "because designers work intimately with participants, unanticipated influences ... may result from their pervasive presence" (p.20). Unanticipated influences were kept to a minimum by carefully documenting, in the design narrative, the researcher's involvement while undertaking other roles. Throughout the research, every attempt was made to provide the participants with objective resources rather than subjective advice to minimise the influence of the researcher on the results of the study. At times this was a difficult decision to hold to, as the researcher would have liked to have had a greater influence on the practice being developed, but it was upheld for the sake of reliability and validity.

It is "the responsibility of the design-based researcher to remember that claims are based on researcher influenced contexts and, as such, may not be generalizable to other contexts of implementation where the researcher does not so directly influence the context" (Barab & Squire, 2004, p.10). To increase the reliability of the research, researcher reflexivity was encouraged by the continuous recording of events within the design narrative, and through the recording of the multiple roles of the researcher in section 3.6 of this thesis. The design narrative also supported the development of rich description which increases the credibility of this research in two ways: it allows the reader to experience the context of the research and to 'meet' the participants in such a way that the validity of the study is assured, and "rich description also enables readers to make decisions about the applicability of the findings to other settings or similar contexts" (Creswell & Miller, 2000, p.129).

The validity of these research findings was promoted through triangulation of methods, instruments and sources (see Table 1). Cohen, Manion and Morrison (2007) stated that "triangulation is a powerful way of demonstrating concurrent validity, particularly in qualitative research" (p.141) and, writing about design-based research, Van den Akker (1999) suggested that, "to avoid an overdose of uncertainty in data interpretation, often triangulation (of methods, instruments, sources, and sites) is applied." (p.10). Triangulation increased the accuracy of the interpretation of data, and decreased the likelihood of bias. Site log data indicated the online actions which took place, but not the intention behind the action. Interviews, and other data volunteered by participants, indicated their perceptions and the intentions behind their actions. Participants' interpretations of each other's behaviour could be verified through observations, site data, or data from other interviews.

The research participants and the researchers' peers were also instrumental in assuring the validity and reliability of this research. Member checking was sought at several points in the research. All interview transcripts were given to the participants for verification. As papers on the research were presented at conferences, they were also shared with the participants, to elicit feedback. Peers supported the reliability of the research through the provision of peer debriefing. The university's e-learning PhD candidate community provided a sounding board for ideas, feedback and suggestions on interview schedules and frameworks for data coding, and some inter-rater reliability. The

comprehensive coding guide produced for Phase One interview data was provided and single page samples of anonymised data were then coded by peers to establish their reliability. Above this were the researcher's supervisors who throughout the research asked the tough questions, challenged the assumptions and expected the high standard of practice which ensured both validity and reliability in this research.

### 3.9 Limitations of the study

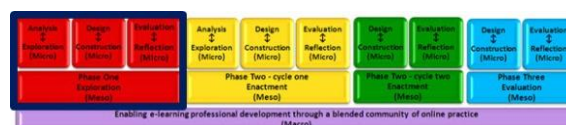
The findings of this research are particular to the ALEC organisation, the individuals, the time, place and the online environment involved in the research. A change in any of these elements may have led to quite different results. If the people involved had been more or less enthusiastic or able; if the ICT infrastructure had been more pervasive or the organisation situated elsewhere; if there had been no natural disasters or worse disasters, these elements may have combined to produce different findings. While the organisation involved was fully represented in the community focussed aspects of the research, not all of the community were able to participate in the online classroom focussed aspects. Other perspectives and information may have been missed because of this limitation. The time and effort and expertise which the researcher brought to this project was considerable and it needs to be recognised that this too may be an integral aspect of the study which may not be able to be replicated.

As Van den Akker (1999) pointed out, "the apparent lack of rigour and control and methodology of development [or design-based] research is sometimes aggravated by unforeseen events or forces in the environment of the development task in context" (p.11-12). This research context included significant unforeseen events in the form of four major earthquakes, thousands of aftershocks, and the resulting disruption of all aspects of the participants' and researcher's lives. The extent to which this seems to have influenced the research can be recorded, but may never be fully understood.

This research may have limited generalization but, being design-based, this research not only developed the practical solution implemented in this research context, but also the set of design principles underlying the solution. Above all it is hoped that the design principles distilled from this research will be able to be implemented to good effect in other contexts, to produce a positive or improved result. The phases of the research and their outcomes are described in the following chapters, beginning with the initial exploratory phase which informed the developments that took place over the two years of this study.

## Chapter 4 Phase One and Phase Two meso-cycle one: Community resource and communication focus

This chapter records the first two cycles of the design-based research and begins the rich description of the case at the centre of this study. The Exploration phase which began with a review of the literature, continued in the practical application of ideas and theoretical understandings drawn from the literature. In collaboration with the members of the ALEC organisation, an online environment was developed to suit the needs of their community of practice. The design and development of the initial iteration of the online environment, and the ways in which the community members engaged with and contributed to its redesign, are described in section 4.1. The redesigned environment, the community members' engagement within it, and the key elements of its design and implementation are described in section 4.2.



### 4.1 Phase One: Exploration - design and implementation

'Informed Exploration' is the first stage in this phased approach to developing an online environment to support adult literacy educators in developing e-learning for their clients. This initial iteration of the online environment was designed to support the members of the extant community of adult literacy practice to engage within the online environment and begin to develop online practices. The facility provided by the online environment to communicate and access resources online, encouraged the engagement of the members of this physically and temporally spread community.

#### 4.1.1 Overview

The site was developed using the learning management system, Moodle version 1.9. (More in-depth information about Moodle can be found at <https://moodle.org/> ) The Moodle platform provided the tutors with the ability to access and share resources, collaborate, and take part in online discussions. The design was deliberately flexible so that it could continue to change and grow as the community extended its use of this environment. As an acknowledged master of online practice the developer sought to model good practice in site development at all times.

At each stage I'm going to create the site in the best way I possibly can. I want them to learn from what they see that I have done in the site. I really think that once you've been a part of something that works well, you get a better sense of what will work and what won't. (Design narrative, 18/2/10)

During this stage of the site development, the ALEC staff were becoming familiar with the online environment and developing their skills in using it. Through their engagement online the tutors were able to consider how this environment might enhance the learning of their clients, without any

pressure to design or implement changes in their teaching practice. The developer explained in her design narrative,

In order for the tutors to be comfortable with the idea of using a Moodle site to incorporate e-learning for their learners within their practice, I feel I need to help them to be comfortable with the technology and have some ownership of the environment first. So the development of the site will change gradually and incorporate more e-learning aspects as the tutors become more accustomed to using it (Design narrative, 18/2/10).

Participants' confidence in the environment, and in their own online practice skills, was expected to develop more easily for the tutors in this first phase, through interacting only with each other as colleagues and being a participant with only 'student' level access to the site, without the added complication of interacting with their clients online at the same time.

#### 4.1.1.1 Participants

Phase One was conducted at the Adult Literacy Education Centre (ALEC) which at this time had a staff of twenty. The centre shared its offices and on site classrooms with a parent organisation which also provided network infrastructure and gave technical support. The ALEC tutors made up the existing ALEC community of adult literacy practice, none of whom had expertise in online practice. The nineteen participants in this first phase of study consisted of the manager of the centre, Madeline; the office administrator, Agnes; and seventeen tutors working in three different types of locations. Four of these tutors had extra responsibilities (see Table 3). Tutors, whose work was 'At-Base', taught one group of 7 to 15 clients in a classroom on the ALEC site. Each 'Community' tutor taught groups of 3 to 10 clients in locations provided by community organisations. Each 'Workplace' tutor taught individuals or small groups of 2 to 4 clients in locations provided by each workplace. Community and workplace tutors might teach several groups in several different locations each week. There was also a small team of tutors (writers) who worked on the ALEC site developing resources for use by ALEC tutors and tutors from other organisations.

#### 4.1.1.2 Pre-existing environment

Before this first phase of the study, both communication and electronic resource storage took place through ALEC's parent institution's communications management system, First Class. This system delivered the parent institution's email and provided shared folders in which the resources were kept (see Appendix G: The First Class resource folder system). The limitations of this system restricted the availability of resources as well as the availability of email communications because it could only be accessed through a computer which had the First Class software installed on it.

Many of ALEC's resources were also kept in paper copy and were only available on site. While this was acceptable for some teaching resources, it was difficult for tutors to ensure that version specific resources, such as those related to national standards assessments, were always the most up to date. Interview data revealed other difficulties for tutors included being unsure of where a copy was kept, and having the last paper copy of a required resource removed from the system making it completely unavailable.

Table 3: Phase One participants' pseudonym, role and workplace

Pseudonym	Role	Workplace
Madeline	Manager	On site
Agnes	Administrator	On site
Annie	Lead tutor	At-Base
George	Tutor	At-Base
Faith	Lead tutor	Community
Mary	Tutor	Community
Nancy	Tutor	Community
Nigel	Tutor	Community
Yvonne	Resource tutor	Work place & Community
Barbara	Tutor	Work place & Community
Leslie	Tutor	Work place & Community
Annelies	Lead tutor	Work place
Morag	Tutor	Work place
Norma	Tutor	Work place
Ralph	Tutor	Work place
Glenda	Tutor	Work place
Ken	Tutor	Work place & Community & Writers
Tina	Tutor	Writers
Nathan	Tutor	Writers

### 4.1.2 Site development

The researcher had initially developed a Moodle site for an ALEC tutor and a class of non-native English speakers in 2009. Through this design-based research the site was developed further with the intention of bringing the ALEC staff into the online environment in a way which provided the professional development to support the inclusion of e-learning within their practice.

A set of draft design principles for the development of the intervention were synthesised from the initial review of the literature and from consultation with ALEC staff members. These draft design principles (see Table 4) guided the initial development of the online environment which took place in Phase One of the research.

ALEC tutors had first been introduced to the Moodle site in March 2010. At this time the site consisted of three separate courses for staff; the 'Main Page', the 'Resources' and the 'How To...' help Area (see Figure 5). Definitions of Moodle terms and ALEC site terminology can be found in Appendix A: ALEC Moodle Terminology.



Table 4: Draft design principles synthesised from the initial literature review and consultation with the research participants

Draft design principle	Application	Source
Job embedded, incorporating the use of e-learning technology within the practitioners own practice	Focus the environment around the practitioners everyday work and needs (resources, communication, administration)	Research participants; Lave & Wenger (1991); C. Smith & Gillespie (2007); Garet, Porter, Desimone, Birman & Yoon (2001); Lawless & Pellegrino (2007); G. Wilson (2007); Putnam & Borko (2000); Mackey (2009)
Improves the practitioners current situation (communication and resources)	Provide ease of communication and access to shared resources and documentation	Research participants; Macdonald & Hewling (2008)
Enables connections to develop between practitioners	Provide forums for different types of interactions (news and notices, General discussion, Resource sharing, Social) and emailing of forum posts	Research participants; Gray (2004); Stuckey & Smith (2004); Hildreth, Kimble & Wright (2000); A. Herrington, Herrington, Kervin, & Ferry (2006); Riverin (2009); Moore & Barab (2002)
Enables collegial and collaborative practice, as an extension of the existing community of practice	Provide transparency in these initial areas, as an extension of the existing community's physical environment. Provide the potential for separate spaces for collaborative work.	Lave & Wenger (1991); Davis, Fletcher, & Absalom (2010); Guskey (2003); Brennan, McFadden & Law (2001); G. Wilson & Stacey (2004); Thompson & Kanuka (2009)
Provides examples of good practice	Model good practice in the content, navigation, layout and tool use in every section of the site	Lave & Wenger (1991); Shephard, et al. (2008); Herrington & Oliver (2000)
Enables practitioners to experience a student perspective	Enrol the majority of staff as a 'student'. They may use the tools made available, but not change the layout or tool use.	Palloff & Pratt (2007); G. Wilson & Stacey (2004)
Simple and easy to use	Provide a simplified interface with limited administration access	Research participants
Easily accessible	Use a Moodle platform accessible from any internet enabled device	Thompson & Kanuka (2009); Riverin & Stacey (2008)

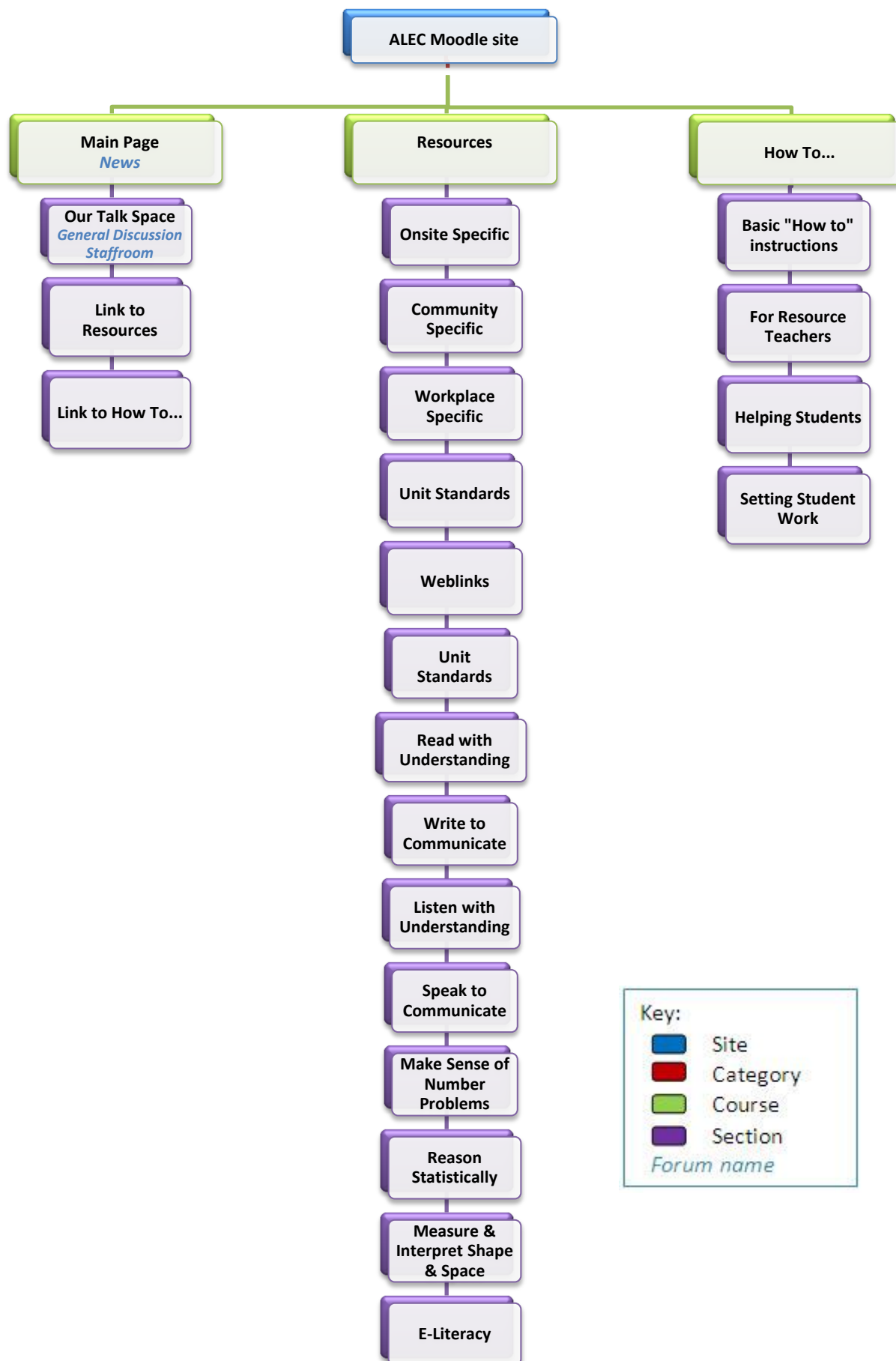


Figure 5: ALEC Moodle Sitemap (May 2010) showing the site, the categories, the courses and the sections within each course



#### 4.1.2.1 Site access

Trouble free uninterrupted access was a priority in setting up the site. The first step in ensuring the accessibility of the site to participants was to organise well supported hosting so that any technical difficulties which might arise could be dealt with quickly. This was accomplished after some initial setbacks in site functionality, and participant comments indicated that they appreciated their unrestricted access to the site and its contents. There was no reported downtime from the hosting service in the United States during 2010, so availability of the site continued uninterrupted throughout Phase One. This was of some benefit during the disruption caused by the major earthquake which took place during this phase.

Participants were initially enrolled in the site by the developer. In September 2010 Agnes, ALEC's office administrator, felt confident enough to undertake this responsibility. Access to the site was through login using a username, decided by the ALEC administrator at the time of enrolment, and a password, which could be changed by the user. Only Ralph, who had a very secure network set up in his home, experienced some frustration in accessing the site and downloading documents. "If I'm using my home computer in my network, my network says 'another site is asking you to run a programme that's not blah, blah, blah, blah, blah. I have to approve it and then it opens up. It's just a safety protocol at home'" (Ralph, Phase One interview). Occasionally a participant forgot the web address of the site, but the most frequent problem experienced was not a technical issue, it was forgetting their password. The ability of the site to promptly send an automated reply with a new password was appreciated by the developer, who would otherwise have needed to reset the passwords.

#### 4.1.2.2 Levels of access

Not all participants were given the same level of permissions in their access to the site. The developer felt it was important that tutors were able to begin making use of the site with minimal support. This was done to encourage the tutors to actively take part in the site without being concerned about 'breaking' it, or having to learn too much before it was possible for them to engage with the site content. As the tutors grew more comfortable with the environment, they could be given higher levels of access with greater responsibilities. The lowest level of access within the site is that of 'student' and it was at this level that access was provided to the thirteen tutors without leadership roles who were enrolled in the site. This provided them with access through a simplified interface, which had required only a minimal 60 minute face to face, fun introductory session for the whole staff as a group. They were able to view and download material made available to them and contribute through forum posts and replies, but they were not able to make any changes to the site, or add to the site content except through the forums.

The manager, office administrator and lead tutors were the community members who the researcher had expected would build their expertise in the use of this e-learning tool, thus enabling informal PD to take place within the community. They were given higher levels of access to the tools available in the online environment than the other community members. The office administrator was able to add new users to the site and provide them with passwords. Both the office administrator and the manager had 'teacher' access to the main communications and resources spaces. The lead tutors were given 'teacher' access to the Resources space and a separate 60 minute

support session by the developer, to enable them to feel more comfortable with the extra responsibility of being able to make changes on the site. While most tutors were able to contribute resources by adding them as a post within the 'Resource Sharing' forum, the lead tutors were able to add to the Resources space any resources that they thought would be a good permanent addition to the site. Providing lead tutors with this higher level of permissions enabled them to continue their lead tutor role online, and more easily take responsibility for making sure that the resources available were of a good standard and that they were the most up-to-date versions.

### 4.1.3 Site Design

#### 4.1.3.1 Site organisation

The ALEC Moodle site opened with a simple login page from which members of the site could access all the areas in which they were enrolled. Originally all courses were created as individual courses, but a request from the office administrator led to the developer rethinking the way that the tutors were enrolled, and to grouping the courses under categories. "To make it easier for Agnes to add tutors to the tutor space, I've added everybody at the category rather than the course level." (Design narrative, 21/10/10). This change necessitated the restructure of the site to reorganize courses using categories, and added another layer to the site organization. The courses which had been developed for smaller groups of tutors working on specific projects were now organized into a 'Working Groups' category. During this first phase of the research, the site content was kept within two categories 'Tutors Only', containing the facility for community wide communication and storage of community resources, and 'Working Groups' (see Figure 6). All staff were enrolled in the courses within Tutors Only.

The design of Tutors Only was kept as simple as possible. It consisted of the original three spaces; the 'Main Page', the 'Resources' and the 'How to...' areas. The developer was very conscious of the need for participants to easily find their way around the site, and locate the content they needed. The availability of content was seen as the first priority by at least one tutor whose recommendation was, "that we get the stuff on it and don't care about its organisation early on, and organise it as you go. It's more important to get the stuff on, cos that's what brings us to it." (Ralph, Phase One interview). Other tutors expressed a strong preference for simplicity of organisation and made suggestions for improvement in this area,

I think for me it's just that sense of clean and really simple with lots of transparency ... Just being able to have that really clean, and easy to follow, and I think the foundations of that are there. I suppose at the end of the day it's just being able to have those designated areas well marked. (Barbara, Phase One interview)

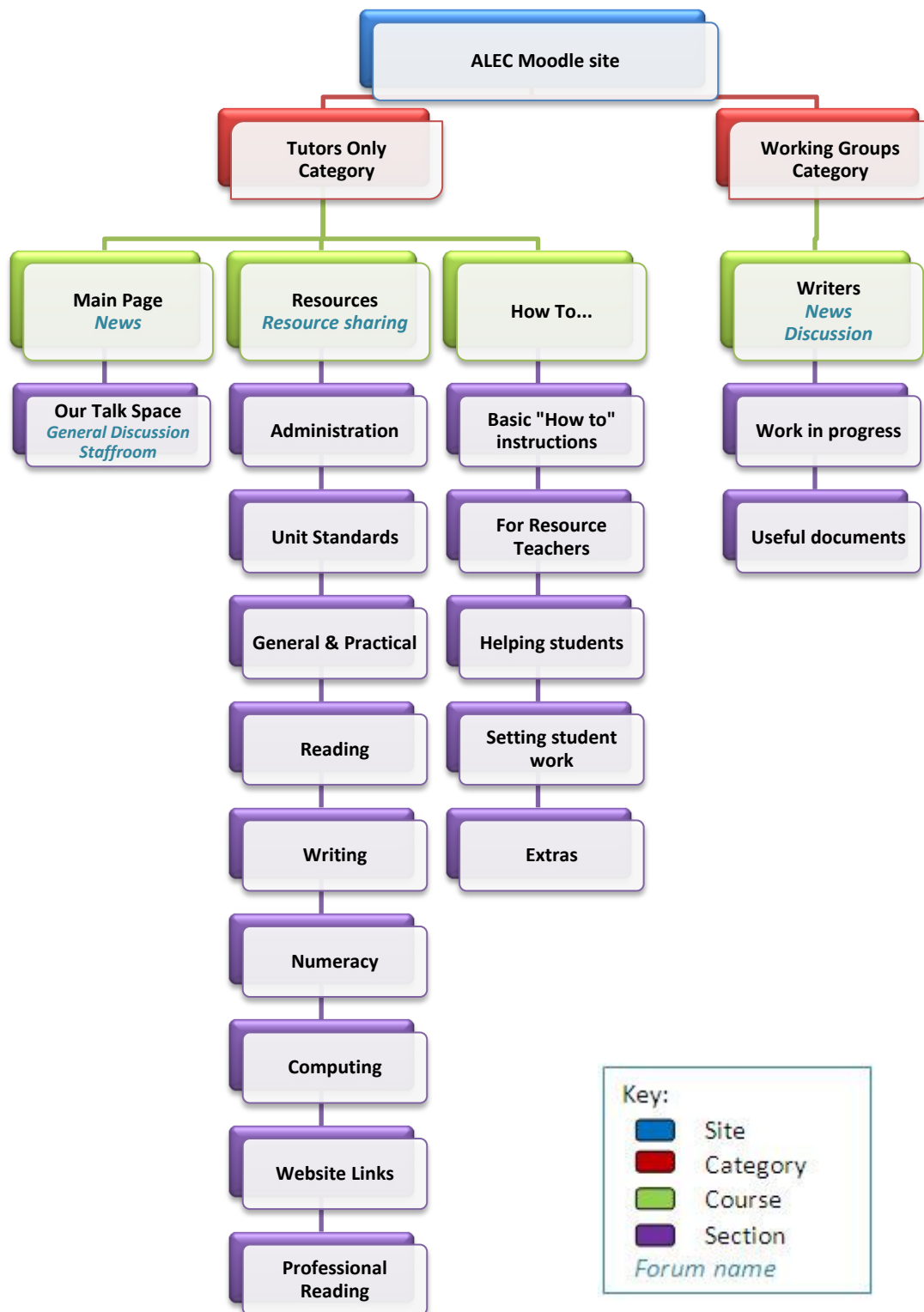


Figure 6: ALEC Moodle Sitemap (October 2010) showing the new categories within the site, and the changed sections within each course

### 4.1.3.2 Navigation

Initially navigation on Tutors Only was provided by buttons on the Main Page which lead to Resources and the How To area, and supporting textual instructions to aid new users (see Figure 7). A tool called an 'html block' was added which provided links between the three courses which make up the "Tutors Only" area, and provided a form of navigation similar to the one used within each of the spaces. As part of the ongoing consultation involved in conducting design-based research, feedback was received which lead to changes in the site. Typical of these early changes were those made to the 'Main Page' of the 'Tutors only' area. While having both forms of navigation worked well, after a few months of use tutors felt that it cluttered up the site, and they preferred a simpler design. To this end the textual support was removed (see Figure 8).

To provide tutors with a familiar structure, the 'sections' within the design of the 'Resources' area were originally copied from the previous system of folders within the parent organisation's email client and shared space, First Class (see Appendix G: The 'First Class' resource folder system). The original system had been set up but not fully populated, and consequently many of the corresponding 'sections' of the initial Resources area were empty.

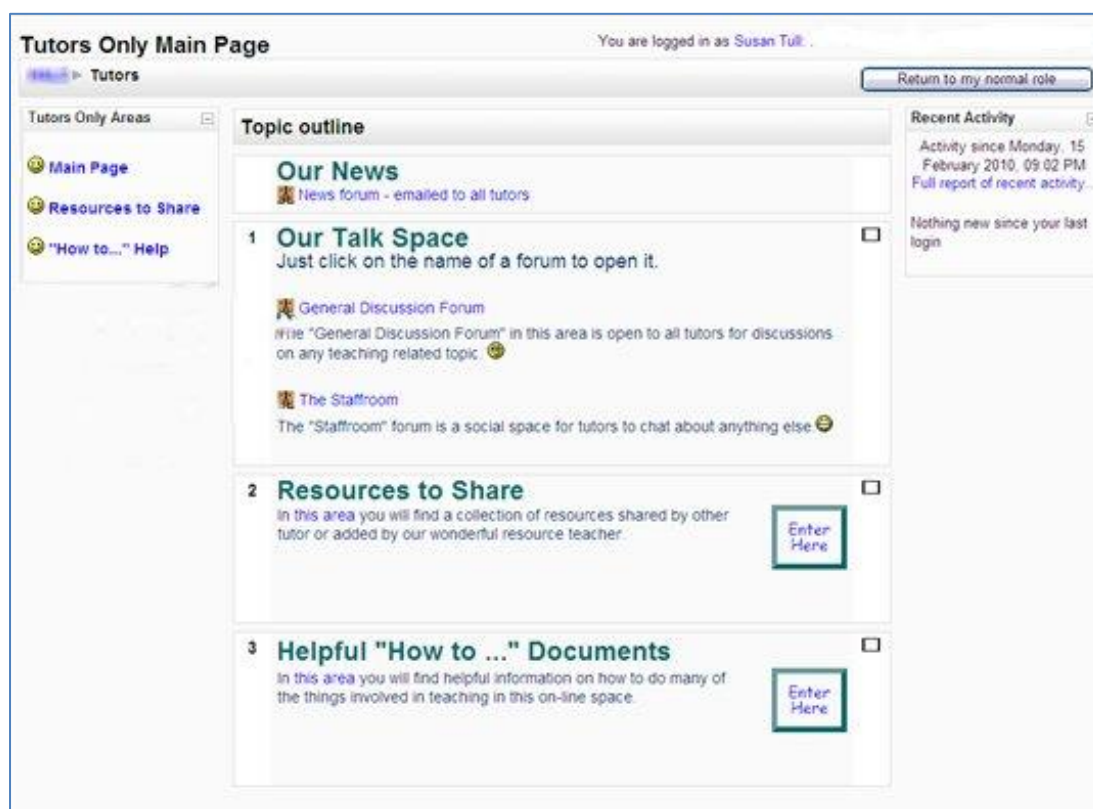
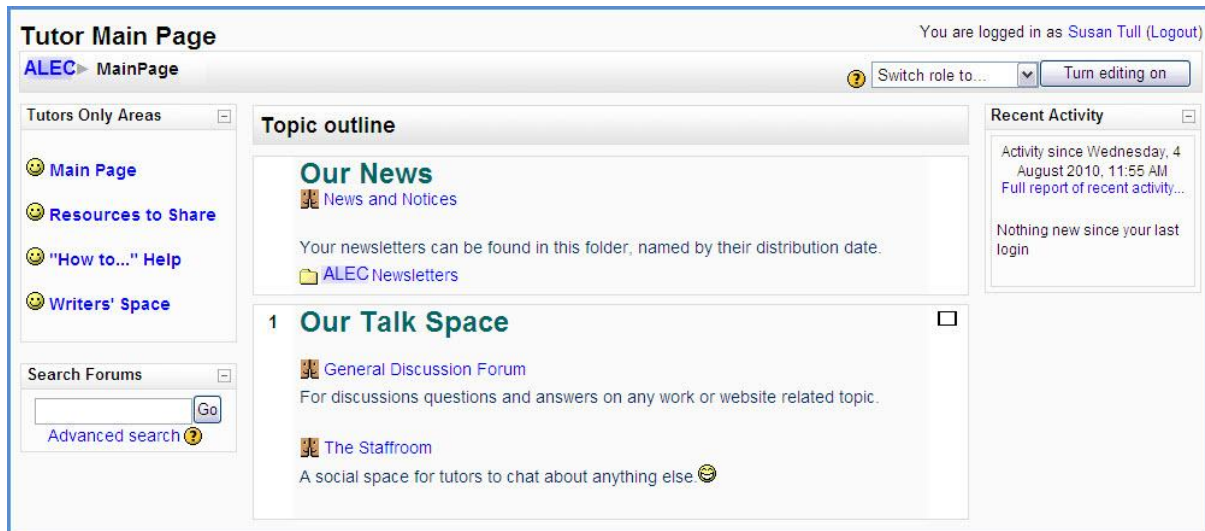


Figure 7: Main Page - Tutors Only area (June 2010) showing the navigation buttons and supporting text in the centre, as well as the navigation block on the left



**Figure 8: Main Page - Tutors Only area (September 2010) showing the simplified page with the Writers' space added to the navigation block**

Clarity and simplicity were the two attributes in the navigation of the site most valued by participants. Tutors highlighted the 'breadcrumbs' (links showing their navigation path which appear along the top of the webpage) as being particularly helpful. While most tutors have had very little difficulty using the site, three initially experienced a little difficulty in knowing where to find things, and felt that they needed to be more familiar with the site's navigation. Because the site was expected to continue to change and develop, future plans included an overview of the ALEC site in the form of a site map.

As the participants' use of the online environment progressed, discussions with the manager revealed that there was a need for private spaces for discussion and collaborative work by smaller, more focussed groups of tutors. To keep the required level of technology use to a minimum, the developer initially provided this facility through the ability of Moodle to make content visible to 'groups' of selected users. Further discussions with the manager showed that this had proved inadequate, "Using a simple forum is too limiting for the resource writers, so they are not using it." (Design narrative 22/9/11). A second category of 'Working Groups' courses was set up to provide the interaction and sharing capability required by these smaller groups. The Resource Writers team were the first to have a course set up for them in which they were all given permissions at the level of 'teacher' (see Figure 9). This enabled them to upload and link to resources in an organized way within the sections of their space, and share updates of their progress within a wiki. All of this activity was able to be completed within their own more private space.



Figure 9: Writers' Space (October 2010) showing the tools provided for collaboration

#### 4.1.3.3 Ease of use and confidence

Following their extra support, lead tutors reported very few problems uploading and linking to resources. Tutors mentioned only one difficulty in finding, accessing and downloading resources, which was that Microsoft Office 2007 .docx files could not be opened on their home computers. Files were then uploaded in Microsoft Office 2003 .doc format until .docx became more widely used. Staff who posted within the forums did not indicate any difficulty in doing so. The most often mentioned problem early in the site's use was the interaction between the Moodle site and the organisation's email client, First Class. Emails sent from forums were not displayed in the format in which they were sent out (html format), but appeared in First Class emails as plain text, which was often difficult to read. The forum emails' format was changed to plain text as an interim measure, until the parent organisation changed its email client.

The decision was made by the manager, with the developer's agreement, to have the weekly newsletter only available online from the middle of 2010. Initially the inconvenience of the four clicks it took to access the weekly newsletter annoyed two tutors, who suggested that it would "have been so much easier if this had been sent as an [email] attachment?" (Barbara, Phase One interview). The developer was able to explain that they could simplify the process by using their internet browser to save a 'bookmark' for the folder in which the newsletters were stored. Other tutors commented on the advantages of having the newsletters freely accessible online, and having the ability to easily look back over previous newsletters.

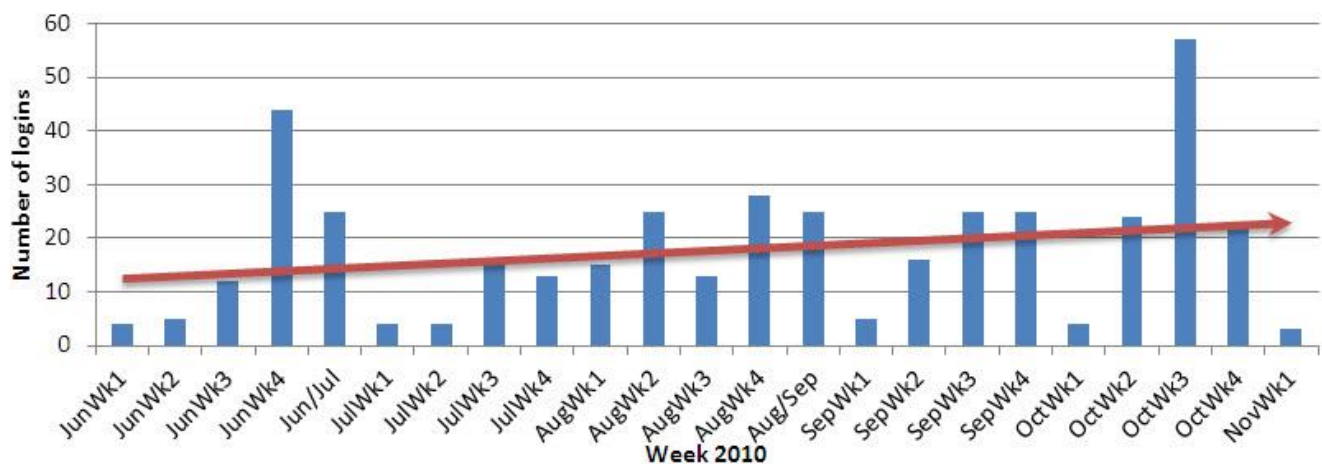
While only one tutor mentioned having a lack of knowledge of computer use, the office administrator, who often helped tutors with computer difficulties, commented that "a lot of them can even, sort of lack a lot of computer savviness, so a lot of them for a start, didn't even go in there [Moodle]... But if it's kept user-friendly, I think they will start using it more and more" (Agnes, Phase One interview). While one of the lead tutors commented that tutors had initially held back,

concerned that they might do something wrong, this wasn't reflected in the comments of the tutors themselves.

The small number of requests for help in using the site and the growth in its use gave an indication of its user friendliness. As one tutor stated, "We're only going to use it if it's useful and easy to use. It seems like people are really buzzing about it and they're going to use it quite a lot, so that's its own testament really" (George, Phase One interview).

#### 4.1.3.4 Site use

The use of the site gradually increased as the ALEC staff began to develop their online practice, over the five months of Phase One of the research (see Figure 10). Of the nineteen participants, fourteen logged in to the site at least once every two weeks.



**Figure 10: Participant logins each week during Phase One, with a trendline showing the increase in logins**

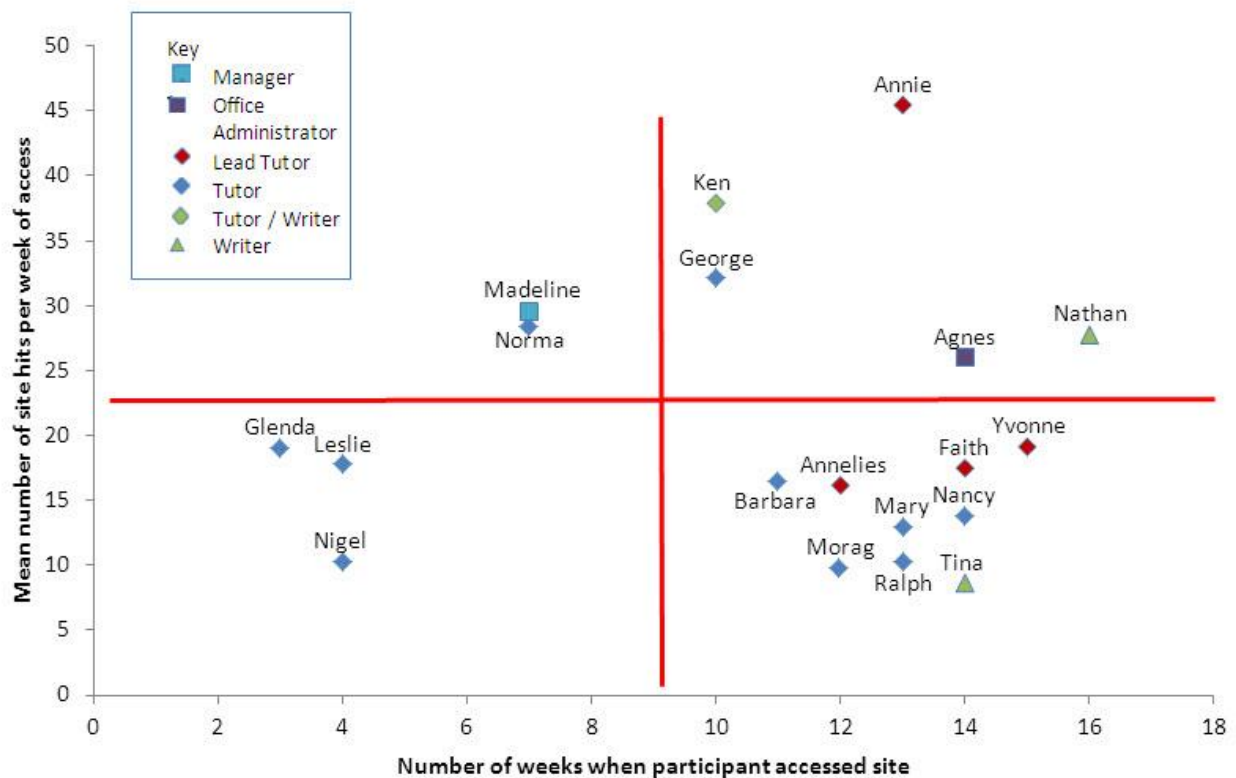
Analysis of the Moodle activity logs from the site revealed four different patterns of site use

- Frequent/High users; who logged in to the site often and were very active during the time they were logged in. Annie, Agnes, Ken, George and Nathan were the most active users of the site. All of these participants were physically based on the ALEC site for at least some of their work and had more regular access to computers during their working hours.
- Frequent/Low users; who logged in to the site often but were not very active when they were logged in. Yvonne, Faith, Barbara, Annelies, Nancy, Morag, Ralph and Mary appeared to mostly use the site when necessary to acquire information relevant to their needs, such as the newsletter or a particular resource. Their use was more targeted; they logged in regularly, but had a lower average number of hits on the site per week.
- Infrequent/High users; who logged in to the site less frequently but were very active in the site during the time that they were logged in. Madeline and Norma only logged in during seven of the 23 weeks of Phase One, but they made extensive use of the site during those times, so they had a high mean number of hits per active week.



- Infrequent/Low users; who logged in to the site less frequently and were not very active when they were logged in. Leslie, Glenda and Nigel very seldom logged to the site, and did not use it much when they were logged in.

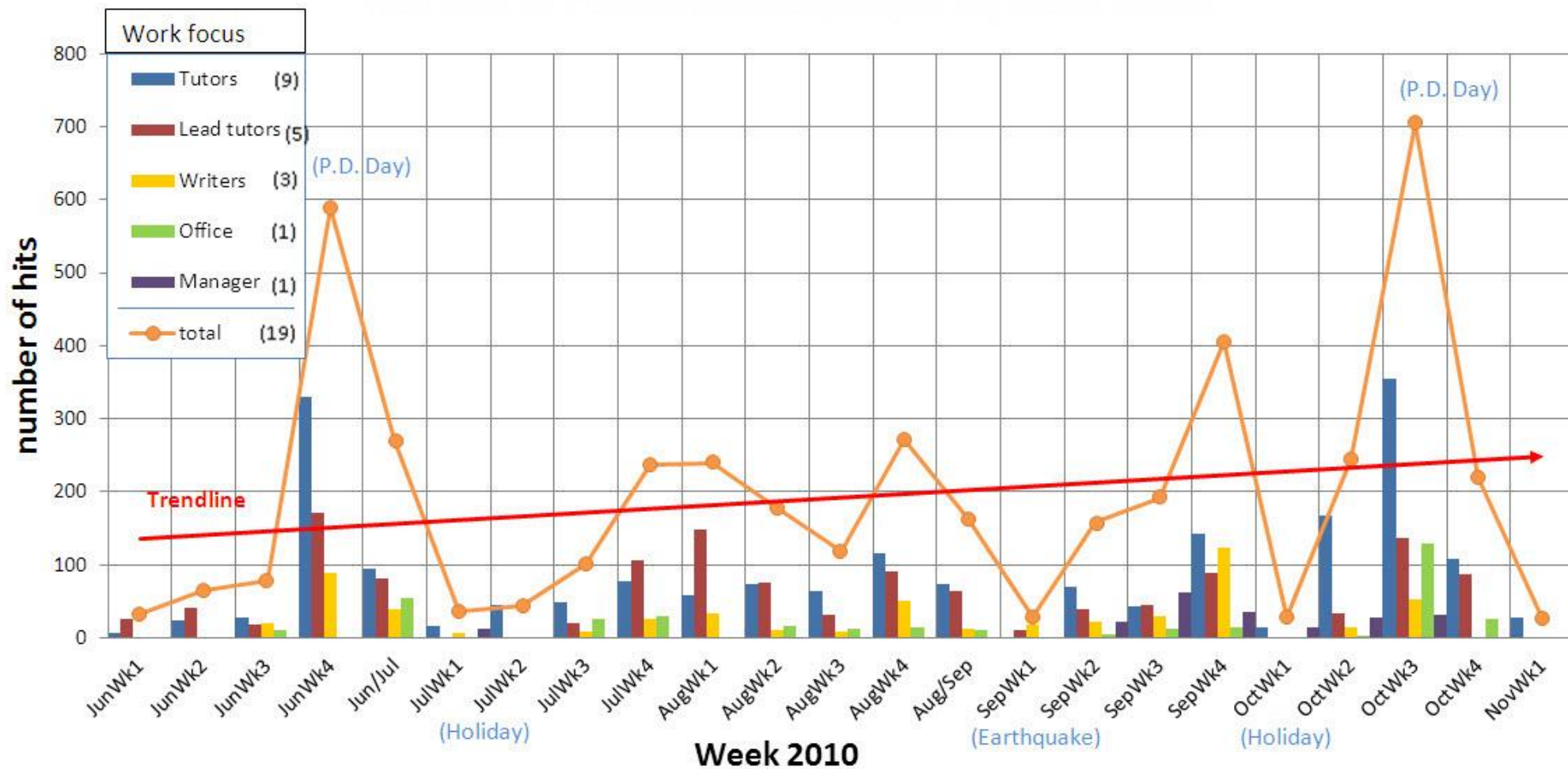
These four patterns of activity can be seen in the quadrants illustrated in Figure 11.



**Figure 11: Overview of participant use of the online environment during Phase One, showing the mean number of hits per week and the number of weeks when the participants accessed the Moodle site**

The amount of site use varied considerably over time; dropping off almost completely during the holidays, and increasing markedly around the times of in service professional development, as seen in Figure 12. While the site use during the first week after the September 4th earthquake was quite low, it increased over the following two weeks, and participants commented on its usefulness in the absence of regular face to face meetings.





Pre-existing environment

Forum subscription compulsory

Main Page simplified & writers' course added

Resource space tidied up  
Site aesthetics improved

Figure 12: Site hits in Phase One (showing participants grouped by their work focus) and major site developments in Phase One

## 4.1.4 Participant Engagement

### 4.1.4.1 Support to participate

One of the most crucial elements in participant engagement during this phase of the research was the support available. The initial introduction of ALEC staff to the Moodle site was conducted in one large group session. While it did provide all the staff present with an overview of the site and allow them to use the tools available to them in an informal way, the developer did not feel it fulfilled her expectations. Because of the lack of online expertise within the ALEC community, the developer was initially the only experienced online practitioner. “With everyone at a different level, there just wasn’t enough time for me to get around and help everybody properly” (Design narrative, 22/3/10). This larger group session took place in a venue which was outside the ALEC facilities where the computer set up was unfamiliar to the staff. The developer commented “I would much rather have shown the tutors on their own computers with their own resources and documents close to hand, otherwise they go home and things look a bit different” (Design narrative, 25/2/10). Having their own equipment available in later meetings simplified the process by focussed the learning on the site, rather than on the equipment.

Resources, such as supporting documentation on how to use the site and its tools, were provided within the “How to...” space of the Tutors Only area. This presented easily accessible timely support for tutors who wanted, or needed, to learn to use the site on their own. This documentation was carefully structured in steps with supporting graphics of the site itself. They were found to be very helpful by staff. These documents, which have a strong graphic element, were particularly helpful to the office administrator, who needed the broadest understanding of the site, because tutors sought help from her in using the online environment and its tools.

I learn by steps so I find your printouts really good. I can do anything as long as I have your printouts on, you know, how to do things... I know that a lot of the other tutors, that don’t use computers a lot, do as well. Because it’s so much easier to ‘see’ and ‘do’ than it is to listen for once and try to remember. (Agnes, Phase One interview)

These help documents, as well as working in small groups, were the preferred method of just-in-time support for both developer and participants. “We just need training, as far as I’m concerned, and not in a huge group” (Faith, Phase One interview). Support provided throughout this phase of the research is summarised in Table 5. The administrator was a key person who gradually assumed responsibility for some of the site administration which had originally been undertaken by the developer. Agnes became one of the more experienced online practitioners during this phase of the research. Her availability on site led to Agnes often being the first person tutors went to for help. Other instances of collegial support began to be seen in Phase One, “I’m just finding my way, with my friend ... who seems to know everything” (Leslie, Phase One interview), but it needed to increase for the community to become self-sufficient online, and provide informal PD in e-learning.

Table 5: Phase One support given and support documents provided on the Moodle site

Date	Audience	Support description
19/2/10	Lead tutors & administrator	Overview of site, logging in, reading and adding forum posts including attachments, uploading files
22/3/10	All staff	Overview of site, logging in, changing passwords, reading and adding forum posts including attachments
28/9/10	Writers' group	Writers' space design, uploading and linking documents, adding labels
Date	Audience	Support Document description
17/2/10	Lead tutors & administrator	How to add files to the files area
22/3/10	All staff	Overview of ALEC Moodle site
22/3/10	All staff	How to change your password
2/4/10	All staff	How to read your forum email
17/5/10	All tutors (Resources)	How to start a new discussion thread (with attachment)
21/7/10	Lead tutors & administrator	Adding writing to a section
9/8/10	Administrator	How to add a new user to the site
30/9/10	All staff	How to get the latest newsletter
21/10/10	All staff	How to update your email address

#### 4.1.4.2 Barriers to participation

The implementation of the online environment increased the accessibility of resources for most tutors. Barriers were created for other tutors by a lack of computer equipment. The availability of online access was also restricted in teaching spaces which had no internet access, or an unreliable wireless signal. "At *Workplacename* [the signal] is so weak that I'm in one minute and then the signal's faded and it's gone and I'm off again so it's like oh. Yeah, it's difficult for me, the access part of it" (Annelies, Phase One interview). An unexpected lack of access was caused by damage to workplace and community equipment and teaching spaces caused by the earthquake of 4 September 2010. Faith explained, "I no longer have access to a computer while I'm working. Most of them [Community tutors] don't. So we might think 'oh, I need that.' We can't just download it because we haven't got access" (Faith, Phase One interview). Home computer equipment caused problems for two tutors. Faith explained, "My computer at home is old, and so it takes forever to get through the system. And I'm thinking, 'I've got better stuff to do than [waiting]'" (Faith, Phase One interview) and Ralph's computer had what he described as 'very high security levels' which impeded his access.

#### Lack of time or busyness

Other barriers to online participation mirror some of those found in the literature. These were related to tutors' own cultural contexts such as habits of communication, busyness and technology use (P. Smith, et al., 2005; G. Wilson, 2007). Lack of time was the most often mentioned barrier to online participation. "I think initially it was ... ah cool, new thing, excellent... [then] How am I going to find time for this?" (Barbara, Phase One interview). Almost all the tutors mentioned being very busy

with the responsibilities they already have. “Most of us aren't at a computer long enough at a time to think, ‘I’ll have a break here and stick something onto Moodle’” (Annie, Phase One interview). Twenty three times within the Phase One interviews busyness or time constraints were given as reasons why tutors had not engaged more with the site. In most group interviews and two individual interviews, tutors spoke of participating as an ‘extra’ thing to do, or another obligation outside what they saw as their normal working hours. This view gradually changed for some tutors. “[It] was personal reluctance ... I found it was just another task ... I was reluctant. Now I’m more used to it” (Norma, Phase One interview). Other tutors’ views continued to change as they saw the advantages the online environment offered them in their administration and communication. “It’s been massively useful. I use it just about every day” (George, Phase One interview).

### **Relevance**

Initially not all tutors saw the site as something which was relevant to their work. “I’ll use something that is relevant to me and is useful, and I haven't quite seen the relevance yet” (Nathan, Phase One interview). Many of those tutors, who did use the site regularly, felt that being able to see the benefits of using the site would increase the other tutors’ use. There was an indication from participants that the site could be used more to encourage further use. As one tutor put it, “Once they are [using it more] there’ll be more stuff there and there’ll be more reason to go on and it will become more of what it's meant to become. It's a sort of chicken and egg situation” (Ken, Phase One interview).

### **Habit**

Making the transition from consistent use of face to face, sms, or email to using an online forum was a gradual process which took place as tutors became accustomed to the idea of a different way of communicating. “It might be because we’re all old and not really Facebooking types of people, you know. Whereas younger people probably would ... communicate through machines to others, whereas I’d just go and ask someone” (Annie, Phase One interview). In two of the group interviews there was a discussion about how easy it was to slip into the habit of doing things the way they had mostly been done – one to one communication, mostly by email.

### **Lack of skill or understanding**

Tutors’ general levels of technology understanding varied. The developer attended an ALEC ‘Technology Professional Development’ day, which focussed on increasing the tutors’ technology skills with a variety of tools such as word processors and spreadsheets. Here a need for PD in the area of information technologies was observed. As Annie put it, “Some people don’t use computers much at all. They’re not very familiar with just going and doing something, unless they have to” (Annie, Phase One interview). Skills such as being able to scan documents, copy web addresses and understand file types could support tutors in becoming confident in using Moodle and other information technology tools. Problems such as Leslie’s, “I don't know how to. Sometimes I don't know how to copy. I wouldn't understand how to do that” (Leslie, Phase One interview) could become less common. However, as George, a self-confessed ‘technophobe’ suggested, “Some people have a sort of a phobia about using computers, but that’s decreasing at a huge rate as we become more reliant on that sort of thing” (George, Phase One interview). By adding more support within the online environment, and encouraging tutors to help each other, the developer hoped to minimise any anxiety felt by tutors as well as increase their ability to engage in the online practice.

## Aesthetics

The ALEC Moodle site was designed as a functional work space. As such it was given a clean, business-like format, with very few distractions. Two of the three lead tutors and the manager felt that the initial design was too plain, “If I have too much white space and just words, I tend to just switch off a bit” (Annelies, Phase One interview). They showed a marked preference for a more colourful, interesting space. “We should make it more colourful - that encourages me” (Annie, Phase One interview). “More images on it so that it's an exciting place to look at” (Madeline, Phase One interview). Through the interviews it became clear to the developer that in this context the functionality of a simple design should be provided without appearing too sterile.

While one tutor preferred the content of site to be kept strictly business-like, others either enjoyed the occasional social element in the appropriate area of the site, or chose to ignore the social content. Other tutor suggestions for making the site more attractive to the tutors included; a joke page, fun quizzes and the introduction of a photograph spot or brag-book, on the Main page to highlight recent success stories within the community. The developer implemented this last suggestion during Phase One and found all the suggestions encouraging because they showed the beginning of a sense of ownership of the site by the tutors.

### 4.1.4.3 Participation legitimised

The voluntary nature of tutors' participation within the site was acknowledged by the manager. Madeline encouraged tutors in their use of the site by responding to posts they made, for example “when a couple of people replied, I based the decision on those two people” (Madeline, Phase One interview). The developer's design narrative recorded ideas the manager had of providing fun rewards for participation which were not implemented. Leslie revealed a perception of possible negative consequences of not participating. She said, “I felt it was a tremendous obligation to get on there and contribute because I felt that Madeline might be watching, and Madeline was watching. She said it was very important I'm sure it is. But... I felt like I had to get on there and contribute because I was being watched professionally” (Leslie, Phase One interview). Madeline had stated that, “they just need that incentive to see that there is stuff going on here, and they are going to miss out if they don't join in” (Madeline, Phase One interview), but this consequence provided little encouragement. With the busyness of their workload in mind one tutor suggested that it might encourage more time to be spent in the online environment “if we [tutors] had maybe twenty minutes or something each week built into our time” (Nigel, Phase One interview).

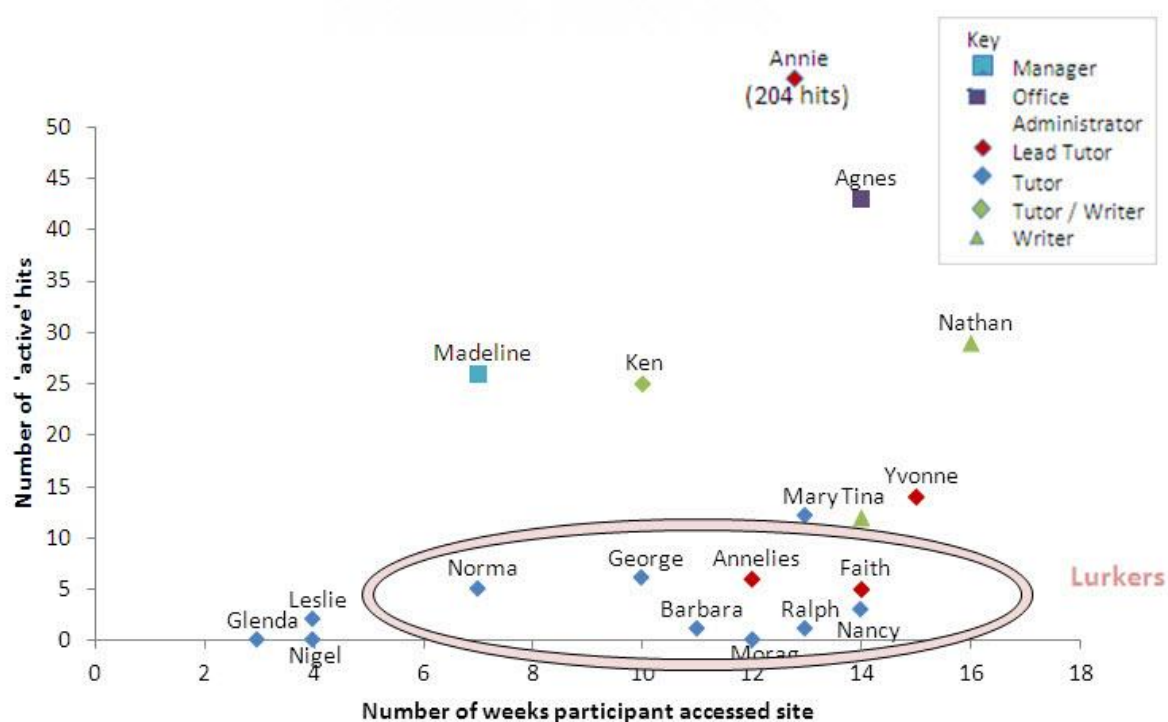
### 4.1.4.4 Initial engagement

Tutor engagement in the site was considered in terms of both ‘active’ and ‘passive’ engagement. Activity within the site was considered to be ‘active’ when it changed the online environment in some way. This included activities such as uploading documents, creating links to content, adding text to the section within labels and posting within forums. Engagement was considered to be passive when the activity changed nothing within the site, such as viewing or downloading resources.

## Lurking

Participants who accessed the site fairly regularly, but contributed very little or nothing, were considered to be ‘lurking’. At least a third of the participants could be considered to be ‘lurkers’ in

the site during this first phase of the research (see Figure 13). There was more lurking early in the site use when participants were getting used to the idea of having an online environment and were learning how to operate within it. By the end of Phase One the developer observed that the majority of site use had become targeted activity with a predetermined goal. The activity observed through the site activity logs showed that most of the tutors who used the site already knew what they were looking for when they logged in. They navigated directly to their target, viewed or downloaded it, and then logged off. Tutors less confident in using the site, and those who had yet to see its relevance to their practice chose to use the online environment only when they felt it was necessary. Some tutors, like Annelies and George, had also begun to spend more untargeted time in the site “I’m much more inclined to explore areas now than I was before” (Annelies, Phase One interview). “I mean I’ve gone on there just to have a wee look around even if I haven’t wanted anything in particular. I tend to find little bits of information that I didn’t even know that I needed to know” (George, Phase One interview).



**Figure 13: Participant 'Active' participation in the online environment during Phase One, showing the mean number of hits per week and the number of weeks when the participants 'actively' accessed the Moodle site, and indicating those tutors considered to be lurkers**



### Downloading docs

The majority of site use was for reading or downloading documents. Tutors really appreciated that the site gave them easy access to documents from anywhere that they had internet access. “I can go in and find things, like the unit standards [assessments] and print out templates and stuff like that fairly easily” (Yvonne, Phase One interview). Having the weekly newsletters available online as a Word document increased the number of tutors who accessed the site regularly. While there were three tutors who made very little use of the site in this first phase of the research, all the tutors had logged on at least once to download documents.

### 4.1.4.5 Deeper engagement

#### Site Content

Tutors and the office administrator commented that online access to the forms and templates vital to the record keeping of the organisation, as well as the newsletters, allowed tutors to be more self-sufficient and supported them in their administrative tasks. Having all the common resources in one place was seen as an advantage. “Just knowing that there is a central repository of current unit standards, and all forms that go with them, and I can just download them and print them, that's the shining thing for me” (Barbara, Phase One interview). The immediate availability of new resources on the site following the ‘Resource Development Professional Development day’ was appreciated by the tutors, and a need for more teaching resources to be available within the site was identified.

For those tutors who use national standards assessments, having the ability to access an up-to-date copy of all the assessment standards available provided a strong advantage over the previous paper-based system, even for those who were initially reluctant to accept the change. “I can go online to Moodle and know that what's there is the right version, the right thing to use. [I can] download it and use it confidently, so it's been massively useful in that sense” (George, Phase One interview). This enthusiasm was however tempered by an awareness that the people responsible for keeping the resources up to date would need to be accurate in their work.

#### Relevance of shared resources

The developer had enabled tutors to contribute content to the ‘Resources’ area through a ‘Resource Sharing’ forum.

By using a forum, I have given them the ability to add resources, to share and to talk about them, but they don't have to worry about the technical side of how you actually go about adding a resource to the section page. (Design narrative, 17/5/10)

While the availability of resources was seen as one of the site's most positive contributions, the relevance of the resources was at times a matter for concern. For those tutors considering adding resources to the site, the biggest difficulty was, “finding out what's relevant to other people” (Nathan, Phase One interview). A concern was expressed that the resources they add might be seen as useless or irrelevant by other tutors, or may become obsolete in the near future. “There's not a lot of things that we can put up that are generic for everyone” (Yvonne, Phase One interview) and so, when tutors considered the wide variety of teaching contexts amongst the staff, the relevance of shared content was of particular concern.

## Forums

Contributing within the forums was the only way tutors with the simpler level of access could deepen their engagement in the site, yet the relevance of the forum content did not cause the same amount of concern as the sharing of resources. Tutors just chose to become involved in the forums as they felt they needed to.

In June 2010 a design decision was made by the developer to have a copy of all forum posts emailed to staff, to increase the sociability of the environment. The developer decided to implement this while the community was being established so that all tutors would be aware of activity taking place within the online environment, and be encouraged to take part. The emailed forum posts became one of the online environment's most appreciated features because of its ability to easily keep the tutors connected. "[It's] keeping me in touch really, basically. It probably wouldn't have happened before. So that's good" (Nancy, Phase One interview). An added advantage was that the emails were sent to the participant's chosen email address, not necessarily their work email address, and so could be accessed more easily. "First Class", the current email system at the time, could only be accessed from a computer which had the software loaded on it. These forum emails helped tutors to both be aware of what was happening within the community, and feel connected to it, without them having to remember to login and check what activity had taken place.

[The email] is really helpful, because that reminds you that there is a space and you know what people are thinking. And you can sort of follow up with that. And you can think 'Well that's relevant to me', and yes, I'll go and perhaps fire off an email or go on there and go and check Moodle. (Nancy, Phase One interview)

Many tutors found that having the forum posts emailed to them meant that they could easily ignore items which held little relevance for them. The few who saw the forums as a distraction, still perceived their value as a method of communicating and displaying important organizational information.

Whilst we're learning chat [in forums] we tend to be a bit informal but as we learn to use chat in a professional sense it will be valuable. But if I'm in a hurry and I want to reference something, I don't want the chat around, I want to be able to reference the tools, and that gets in the road... It's been good administratively. 'Is there a meeting on?' Go to Moodle - I've got a place to go to [to find out]. (Ralph, Phase One interview)

The emails also provide an easy electronic link to the site.

I think the fact that we were notified of anything that went on there through email was a really good reminder for me to go back in to it ... Now every time I get an email notification I go 'oh, that's great' and you go back onto the Moodle site. (Annelies, Phase One interview)

Twice the developer helped keep the communication within the site clearer. An example of this was when Ken shared resource information in a post in the 'General Discussion' forum and, after checking with him, she moved it into the Resource Sharing forum for him and commented in the design narrative, "I think it's really important to help people to get a sense of the different forums in



different spaces being for different purposes. This way it will be easier for people to find whatever they are looking for” (Design narrative, 21/10/10).

### **Forum Activity**

The average amount of activity within the forums gradually increased throughout Phase One of the study (see Figure 14). Forum posts were emailed out to staff, so there was no need for them to login to the site to view or refer to posts online, and hence there is no accurate record of the total number of times a forum post was viewed. Records of staff posting in the forums are much more visible. From late September there was an increase in forum activity within the site. This was fuelled by the combination of an up-coming resource oriented professional development day, and an increase in forum posts from the manager. The developer noted in early October, “There really has been an upswing in forum posts since Madeline started posting on the site. One question about what to do for the resource day has generated a real threaded discussion” (Design narrative, 7/10/10). When the manager began a discussion or took part in one, there were a greater number of posts by tutors (see Figure 15).

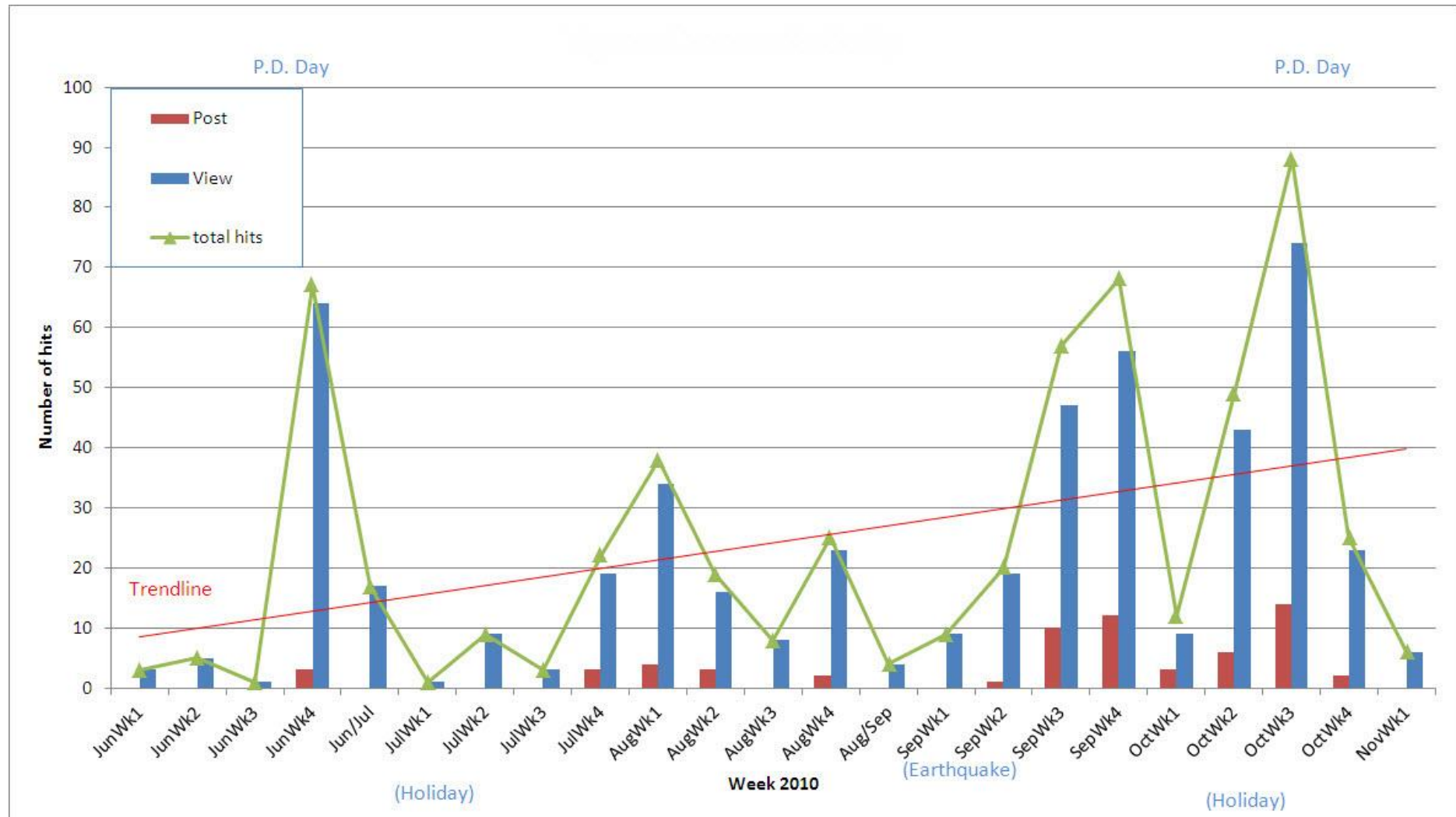
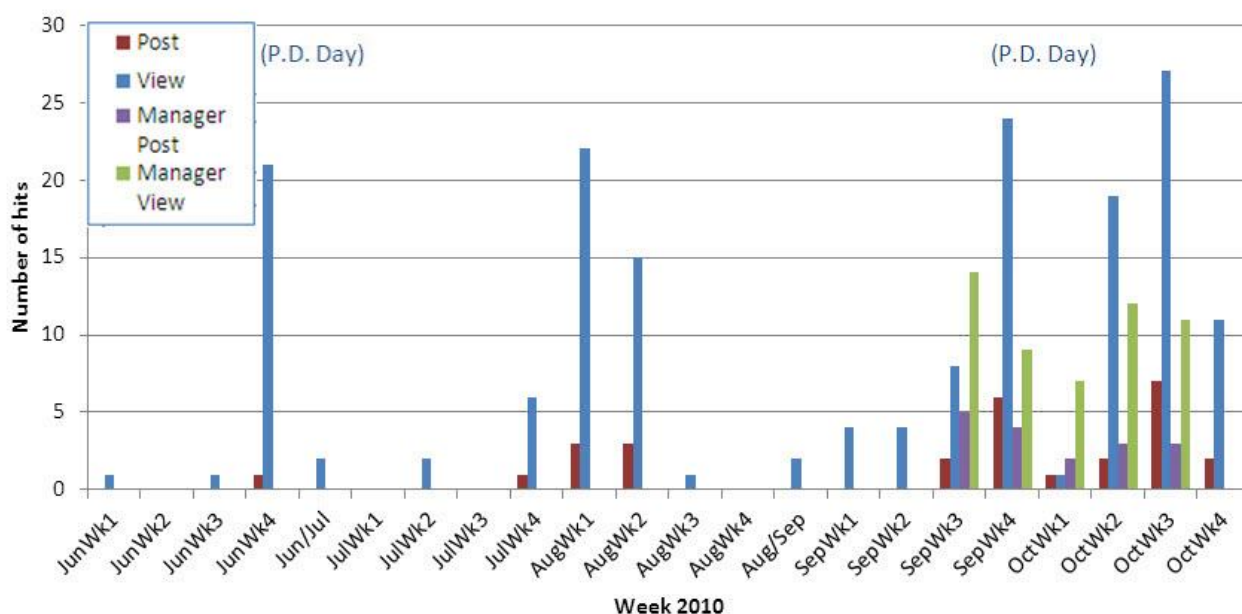


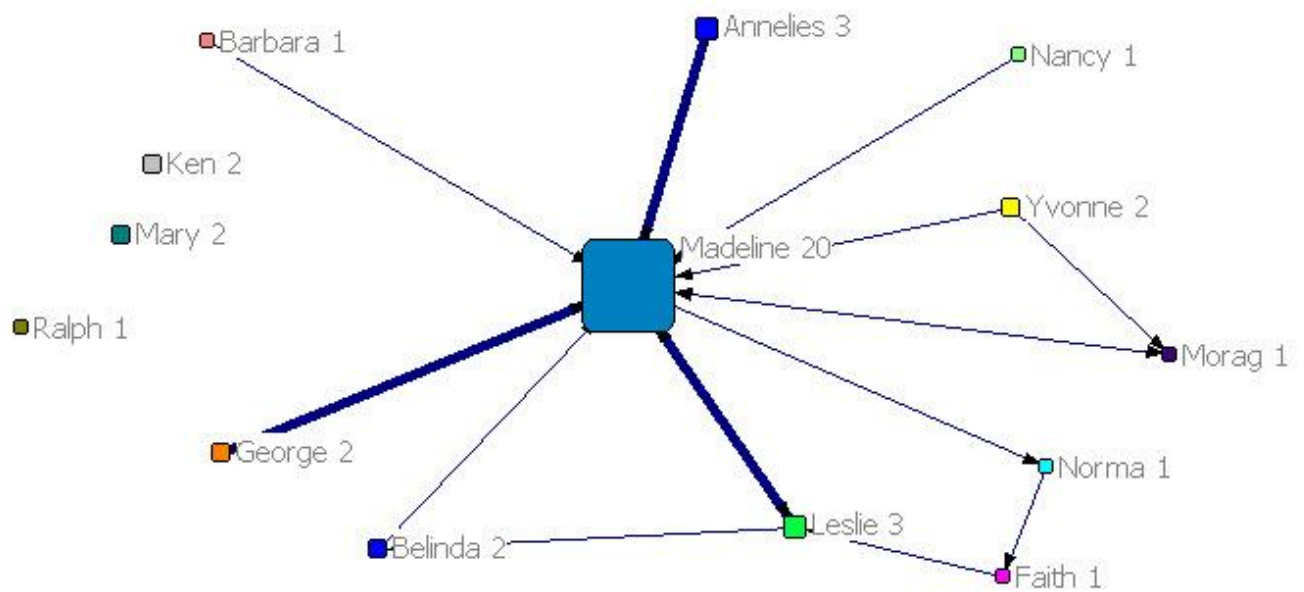
Figure 14: Forum activity, views and posts, in all forums during Phase One, with a trendline indicating the increase in activity



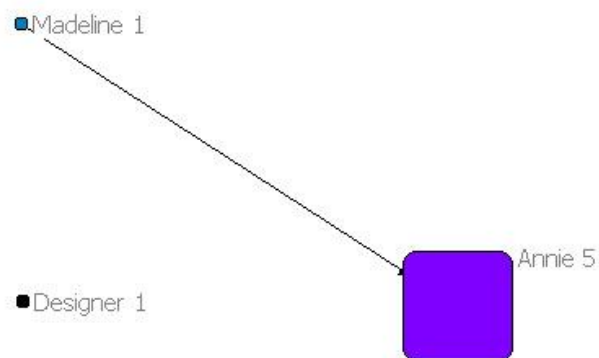
**Figure 15: Comparison of manager and tutor activity, views and posts, in the General Discussion forum during Phase One**

Forum posts could be added in any of the three discussion forums which were active during Phase One. Network diagrams were developed to display the number of posts made by participants, indicated visually by the size of their marker, as well as the connections between the participants who posted in each forum, indicated by the connecting lines. The General Discussion forum was the most active forum. A network diagram of its forum postings (see Figures 16 a, b & c) showed clearly that the manager, Madeline, was the key participant in that forum. She was also the only participant to post in all three forums. The other participants who posted most often, Annie and Nathan, didn't post in the General Discussion forum (see Figures 16 a, b & c). Five participants; Agnes, George, Tina, Nigel and Glenda, didn't post in any forums during Phase One. In each forum one person, who seldom posted in the other forums, made a much greater contribution. This was Annie in the News and Notices forum, Nathan in the Staffroom forum, and Madeline in the General Discussion forum.

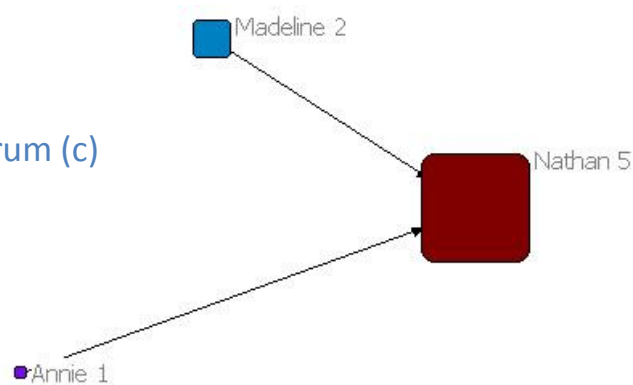
## General Discussion forum (a)



## News and Notices forum (b)



## The Staffroom forum (c)



Figures 16a, b & c: Network diagrams for each forum showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines

## 4.1.5 Connections

### 4.1.5.1 Community ownership

ALEC staff had identified the need for a central space from which they were able to access both resources and information. Having this central place which they share as a community was helpful in clarifying communications and providing transparency in community discussions. The content of forum posts indicated that during this first phase of the research the site was particularly helpful around the collaborative development of an agenda for the Resource PD day. The community showed a willingness to suggest changes to the online environment to suit their needs, and to make it their own. Tutors made suggestions for making the site more useful, such as the addition of their standard template documents online to make them more accessible, and providing an online calendar to highlight upcoming events and deadlines. The potential the online environment had for helping them to develop as a community was recognized by tutors in this first phase. Tutors suggested using the site to help them learn more about each other and their roles within the community, through the addition of staff details such as their contact details, what they teach, and who their clients were.

### 4.1.5.2 Online Community Roles

#### Leadership by example

The occasions when the manager actively encouraged the use of the Moodle site and led by example, supported the blending of the tutors' practice into the online environment for it to become 'business as usual'. As George commented "I think one of the things that have made people really get into Moodle is ... I think it has to come from the top. So Madeline has made it pretty clear to us that this is something we're going to be using. And if you had any resistance to start with you know that this is just something that you need to use being in this job." (George, Phase One interview). This was reinforced by the manager's decision to have the newsletters available only within the site and supported by the office administrator, "I used to get asked, 'oh, can you just give me a hard copy?' so in the end it was 'no, you go into Moodle'" (Agnes, Phase One interview). Towards the end of Phase One the manager made a commitment to try to engage with the site on a daily basis. The developer had attended a collaboration meeting with the manager, "expecting to have to explain how her participation in the site would encourage others to participate, and found that she [Madeline] had already realised that for herself" (Design narrative, 22/9/10). Madeline's decision made a considerable difference both to the amount of activity within the online environment and to the way the tutors felt about it. "Just recently, I know Madeline said, 'Right I'm going to be on there most days.' It's good. It does feel like there's more contact" (Faith, Phase One interview).

#### Other roles and identity development

Other staff also had a major impact on the development of the Moodle site. Annie, the lead tutor with responsibility for national standards assessments, had the most input into Resources. She organised the resources for assessment standards under subject headings which would help tutors to find what they were looking for more easily, "They're not having to scroll through a huge list [of resources] dotted anywhere" (Annie, Phase One interview). She tried to work in the site each week, "adding something or tweaking something" (Annie, Phase One interview) and had taken some

ownership of the space she worked in by giving each heading a bright colour “I’ve just done that because I got sick of blue and white” (Annie, Phase One interview).

Agnes, the office administrator, made the decision to add into Resources the templates, and other documents which the tutors needed ready access to. “Because they [most tutors] work off site, they can’t just come in to the office and say, ‘can I have this form or that form?’ So Moodle is somewhere where they can all go and get all that information” (Agnes, Phase One interview). Early in Phase One Agnes also took on the responsibility of adding new users to the site. The developer had been adding tutors to the individual courses which make up the ‘Tutors only’ area, but Agnes requested the permissions to do this. “It just sort of saves me getting in touch with you to say this one’s [joining] ... I can still let you know they’ve joined, but if I can go in and do all that - it’s done” (Agnes, Phase One interview). Agnes had also asked to be able to delete a tutor from the system when they no longer worked for ALEC, but this was problematic for the research, because removing tutors from the system also deleted their data from the site. This issue was resolved at the end of the study.

Nathan led the way in terms of informal communication by choosing to contribute mostly within the Staffroom Forum. “I put some things on the staffroom page just ‘cause I like that sort of thing. Just a little bit of fun” (Nathan, Phase One interview). While he only ever posted in the ‘Staffroom’ forum the posts he added were usually humorous and were enjoyed for their lighter tone. “I think what Nathan’s doing is good. I think we need more of that. People appreciate that” (Annie, Phase One interview).

#### 4.1.5.3 Making Connections

During Phase One the online environment developed primarily as a way of drawing the community together and keeping it connected. Many tutors, such as George and Tina, appreciated having this new ability to easily keep up with events and information. “Being able to tune in to the buzz of people communicating through Moodle is quite fun, and quite informative, so it adds to my sense of communication with people I don’t see” (George, Phase One interview). “It just puts your finger on the pulse really, of what’s going on” (Tina, Phase One interview). There were times, such as after the September earthquake, when tutors commented that it might have been the best method of communication because it could be accessed from any computer with an internet connection.

Tutors felt a growing awareness of each other in this widespread community, both in their work and as individuals. The connectivity available through the site also helped to improve face to face experiences within the wider community because, as one tutor said, “If you’ve had a few online conversations, or even dropped in a little on online conversations of these people, then when you see them again you feel a little bit more connected, a little bit more comfortable around them” (George, Phase One interview).

#### **Sense of Community**

The three teams within the organization did not often work together. This had led to a disconnect within the organization and difficulty in feeling as though they were one community. “We were overdue for something to pull us all back with something central as a focus. We have been desperate for something for a long time” (Norma, Phase One interview). The Moodle site was recognised as having the potential to accomplish this. “Moodle’s bringing more communication between the

community, the At-Base and the Workplace [tutors], ... Everyone sort of did their own thing ... but now it's come together" (Agnes, Phase One interview). Tutors also appreciated the ability they now had to access resources shared by tutors from the other areas of the community, which gave them a different perspective on their teaching.

### **Shared work and ideas**

Becoming aware of what others in the community were using in the way of resources enabled tutors to broaden their ideas of what might be useful in their own teaching. In this early phase they were already beginning to appreciate the ability the site gave them to share both information and opinions. "For the sharing of stuff, it's going to be good" (Norma, Phase One interview). They recognized the ability these shared resources have to provide new tutors with appropriate useful resources, "I think it's a good place for new tutors to be able to look at things and say, 'Well, somebody's put it on there, obviously they find it useful.'" (Norma, Phase One interview). The manager appreciated the facility to communicate openly with staff online. She explained that it is "a more public forum for people to see each other's ideas and become more of a group that way" (Madeline, Phase One interview).

## **4.1.6 Site potential**

To fulfil the potential, identified by the tutors, for the online environment to build up the community of practice, they commented that it needed to become a part of their culture and suggested that "the more people use it, the more useful it will become" (George, Phase One interview). The example was given by several tutors of a new assessment tool which needed to be integrated into their practice. They suggested that the online environment would provide an opportunity for all tutors to discuss it and help each other learn to use it. Suggestions were made for adding information such as; staff achievements, tutor course promotion, and tutor contact details and photographs.

The end of this phase of the research saw the beginning of the blending of the online and the physical environment for this community of practice. The community was engaging together within the online environment but there was little in the way of practice taking place within the site. Apart from the links to assessment standards and supporting documents which needed to be constantly updated, many of the resources shared on the site at this time were old resources which had been moved into the site from the previous system. There was little on the site in terms of programmes of work or teaching practices. Because many of the tutors had the perception that there was little commonality of practice between the three teams of tutors, they saw little reason for sharing their type of resource online. An idea for more open shared practice came from Annie, one of the lead tutors, who suggested creating and sharing some completed course outline documentation, so that tutors could download an example showing how it could be done and then use that as a starting point for their own work.

### **4.1.6.1 Meeting needs present and future**

Several constructive suggestions for future development made by the tutors enhanced the site's ability to fulfil the community's needs. The number and variety of suggestions made highlighted the extent to which the online environment was already meeting their needs at that time. Many of these

suggestions extended the practices which had already developed in their use of the site. Examples of this included:

- The existing practice of adding resources such as links to websites
  - extended to developing a collection of recommended articles for professional development or adding inventories of physical resources or a collection of usable images
- The existing practice of adding templates to be completed
  - extended to adding timetables and the ability to submit completed templates online
- The existing practice of adding notifications of events distributed via the 'News Forum'
  - extended to providing information about student course availability and adding a calendar of community events to the site

Along with the idea of adding staff details to the site, these suggestions held the potential to further develop the practice of the community within the online environment. Other suggestions made by tutors such as having examples of units of work online, and using a wiki to communicate progress on a collaborative project, provided the first moves towards sharing practice, as well as resources, within the online environment.

The second meso-cycle of this research included further developing the online environment by incorporating the findings of this initial phase. The third meso-cycle would enable tutors to develop their practice online and incorporate e-learning for their clients through this online environment. The manager stated, "I think they'll find it more rewarding when they can do that" (Madeline, Phase One interview). Already at this early stage tutors were considering this possibility. "If there was some way that our learners could use the space, I could see heaps of use for it, but ... it's not there" (Yvonne, Phase One interview).



## 4.2 Phase Two, meso-cycle one:

### Enactment - redesign and implementation

Phase Two, the redesign and implementation of changes, was the second stage in a phased approach to developing an online environment which supports adult literacy educators in developing e-learning for their clients. This iteration of the intervention encompassed a Moodle site redesign using data gathered in Phase One to encourage the community members to engage further with the online environment, and each other within it.

#### 4.2.1 Overview

This phase of the research took place from October 2010 to June 2011. During this time the existing community of ALEC tutors developed from the three separate teams which made up this organisation, to one community online within the online environment. Phase Two of the research was disrupted by several major earthquakes that took place in the home city. These earthquakes impacted the lives of the tutors involved, their use of the Moodle site, and the physical facilities of the organisation, which were either closed or without internet for a total of seven weeks. This will be discussed in more detail in chapter six.



The flexibility of the initial design enabled the site to change and grow as this online aspect of the community developed. Within the redesigned online environment tutors' confidence in the use of Tutors Only increased and a wide range of levels of participation developed. The majority of tutors engaged regularly within the environment, and several suggestions made by tutors increased the community's use of the site. The developer had been accepted as a member of the community in the online environment, with expertise in online practice which could be learned from. She continued to model good practice in site development at all times, both within Tutors Only and in other areas of the site available to the tutors, such as her "Research Space". In the design narrative she explained,

I really want to keep using this Research Space and the 'resources' and 'activities' I use in it as well as possible. I'm hoping it will be another example of good practice which will encourage the tutors to want to use this with their clients. (Design narrative 20/8/11).

This section of the thesis describes the redesign and further development of the online environment and the engagement taking place within it, as well as some key elements revealed by the research data collected during these first two meso-cycles.

#### 4.2.1.1 Participants

Phase Two was conducted at the same Adult Literacy Education Centre (ALEC) as Phase One. At the beginning of this phase it employed a staff of nineteen, all of whom were participants in the research (see Table 6). During this phase of the study the Writers unit ceased operation. As a result

**Table 6: Phase Two research participants' pseudonym, role and workplace**

Pseudonym	Role	Workplace
Madeline	Manager	On site
Agnes	Administrator	On site
Annie	Lead tutor	At-Base
George	Tutor	At-Base
Belinda	Tutor	At-Base
Faith	Lead tutor	Community
Mary	Tutor	Community
Nancy	Tutor	Community
Nigel	Tutor	Community
Yvonne	Resource tutor	Work place & Community
Barbara	Tutor	Work place & Community
Leslie	Tutor	Work place & Community
Annelies	Lead tutor	Work place
Norma	Tutor	Work place
Ralph	Tutor	Work place
Glenda	Tutor	Work place
Ken	Tutor	Work place & Community & Writers
Karen	Tutor	Writers
Nathan	Tutor	Writers

Karen and Nathan ceased to work for the centre. Glenda also left the organisation. These four participants, along with Ralph and Yvonne who were unavailable, were not interviewed.

#### 4.2.1.2 Summary of developments and site redesign

The design principles for the development of the intervention were re-drafted following further review of the literature, and consultation with ALEC staff members. These re-drafted design principles (see Table 7) guided the further development of the online environment which took place in this first cycle of Phase Two of the research.

During this phase of the research three different types of changes were made to the ALEC Moodle site; structural changes to the site, administrative changes, and surface level functionality changes. The structure within the site was developed by formalising the use of the Moodle category level (see Appendix A for Moodle and ALEC Moodle site terminology). At the end of Phase One the tutors were added to the Tutors Only category instead of to the three Tutors Only spaces individually, and in May 2011 the office administrator became responsible for enrolling them in this category. The site was expanded to include two other categories of courses, Working Groups and Classrooms.

The Working Groups category was created to allow smaller groups of tutors to work collaboratively in an online space. The first course developed within this category was the 'Writers Group'. Unfortunately soon after the course's creation the Writers Group themselves ceased to operate as a unit and the course had very little use. Following feedback from the lead tutors, the developer created a 'Lead Tutors' space which only the four lead tutors had access to.

One of the main reasons why I developed the Lead Tutors' space, was not only so that they could have a space of their own in which to communicate, but also so that they would have a space to play around and practice using Moodle. (Design narrative 8/11/11)

A 'Research Space' was added to this category in early February 2011. In this space only the developer had the 'teacher' role. This space allowed the researcher to share the progress of the research, to gather information from the participants, model good practice, and at the same time "show the tutors some of the functionality that will be available to them within their own teaching spaces eg. Groups, choice activities, displaying web content like Prezi..." (Design narrative 8/2/11).

The Classrooms category was created to contain the exemplar online classrooms developed by the developer, and the online classrooms in which the tutors could provide e-learning opportunities for their clients. This was the most rapidly growing category and is discussed in more detail in section 5.1 of this thesis.

Some of these structural changes allowed changes in the administration of the site to be made. The new 'role' of ALEC Administrator, which had a special set of permissions within the Moodle site, was created and given to the office administrator. These permissions allowed an ALEC Administrator to create users' login details and, now that categories had been created, to enrol users in the Tutors Only category.

Table 7: Re-drafted design principles synthesised from the literature review and further consultation with the research participants

Redrafted design principle	Application	Source
Job embedded, incorporating the use of e-learning technology within the members' own practice	Focus the environment around the practitioners everyday work and needs (resources, communication, administration)	Research participants; Lave & Wenger (1991); C. Smith & Gillespie (2007); Garet, Porter, Desimone, Birman & Yoon (2001); Lawless & Pellegrino (2007); G. Wilson (2007); Putnam & Borko (2000); Mackey (2009)
Relevant to the members' professional practice	Maintain a focus on the professional practice	Research participants
Improves the members' current situation (Communication and resources)	Provide ease of communication and access to shared resources and documentation	Research participants; Macdonald & Hewling (2008)
Enables connections to develop between members	Provide forums for different types of interactions (news and notices, General discussion, Resource sharing, Social) and emailing of forum posts	Research participants; Gray (2004); Stuckey & Smith (2004); Hildreth, Kimble & Wright (2000); A. Herrington, Herrington, Kervin, & Ferry (2006); Riverin (2009); Moore & Barab (2002)
Enables collegial and collaborative practice, as an extension of the existing community of practice	Provide transparency as an extension of the existing community's physical environment.	Lave & Wenger (1991); Davis, Fletcher, & Absalom (2010); Guskey (2003); Brennan, McFadden & Law (2001); G. Wilson & Stacey (2004); Thompson & Kanuka (2009)
Provides spaces for collaborative work.	Create a category for 'Working Groups' to allow more private spaces for small group collaboration	Research participants
Provides examples of good practice	Model good practice in the content, navigation, layout and tool use in every section of the site	Lave & Wenger (1991); Shephard, et al. (2008); Herrington & Oliver (2000)
Enables leadership by example	Provide the ability for more advanced members' practice to be seen by others	Research participants; Lave & Wenger (1991)
Enables practitioners to experience a student perspective	Enrol the majority of staff as a 'student'. They may use the tools made available, but not change the layout or tool use.	Palloff & Pratt (2007); G. Wilson & Stacey (2004)
Simple and easy to use	Provide a simplified interface with limited administration access	Research participants
Easily accessible	Use a Moodle platform accessible from any internet enabled device	Thompson & Kanuka (2009); Riverin & Stacey (2008)
Is sustainable	Enable more experienced members to undertake responsibility for aspects of the intervention	Research participants; Hur and Hara (2007); Schlager, Fusco and Schank (2002)



The majority of the tutors would not have noticed any of the structural or administrative changes, because they took place behind the scenes, not making any visible difference to the site. Only the surface level changes in Tutors Only were visible to them. The most obvious change was the absence of the weekly newsletter. The manager explained, “I purposely hadn’t gone back to the newsletter because I’m very keen on us using Moodle instead, so that I put out information as I get it” (Madeline, Phase Two interview). Consequently, mid 2011, the ‘Newsletters’ folder was removed from the Main Page as all information was now disseminated through either the News and Notices forum or General Discussion forum.

The office administrator chose to begin using the Moodle calendar during this phase. The correct dates for meetings and events were then easily displayed to all staff in the online calendar. A ‘Brag Book’ section was added to the Main Page to allow positive community news to be highlighted and to add more community content. Unfortunately, because of the earthquakes, there was very little in the way of positive news or photographs to be shared during much of Phase Two, so many tutors were not aware of this space until it was used towards the end of the year. Following tutor feedback changes were made to the naming conventions and to the arrangement of items within Tutors Only, so that they became as consistent as possible within the three spaces. The change most appreciated by staff was the mid-winter redecoration of Tutors Only, which followed the third major earthquake. The developer chose a rather feminine, but cheerful, purple/pink theme which was very much appreciated by the staff, “I love the colour Susan - and we certainly do need something cheerful to look at” (Annie, Staffroom Forum post 23/6/11).

#### 4.2.1.3 Site logins

Logins to the Moodle site increased throughout this second phase. A trend line added to a graph of participant logins during Phase Two of the research indicates a significant increase, (see Figure 17), but this is partly because there were so few logins through the middle of the phase. A more long term view across the first two phases of the research indicates that the number of logins to the ALEC Moodle site was driven by events rather than by site developments (see Figure 18).

There are significant dips in activity during the holiday period when tutors often are not being paid to work. These holidays are not always taken at the same time by the three teams of tutors, so the periods of fewer logins can extend for up to four weeks during the year and eight weeks over the longer summer holiday. No more than six logins per week were made during a period when one or more of the tutor teams were on holiday. Logins to the Moodle site seemed to build from the low activity during holiday periods, to peak when all tutors are actively teaching during the term, and taper off towards the next holiday period. Other significant dips were caused by the major earthquakes and subsequent loss of electricity and internet access which took place during this time, such as the period from 22 February to 20 March when there was no wireless internet access at the home base. Increases in logins, which did not fit in to the holiday/term time cycle of use, either followed periods when access to the online environment was limited by earthquake related events, or were linked to events such as all-staff professional development (PD) days. This was particularly noticeable prior to the October 2010 PD day which focussed on resource development. As tutors considered resources to be shared and developed, an average of between 24 and 25 logins per week were made in the month leading up to the PD day. The exception during this time was the week when all tutors were on holiday, when there were only four logins.

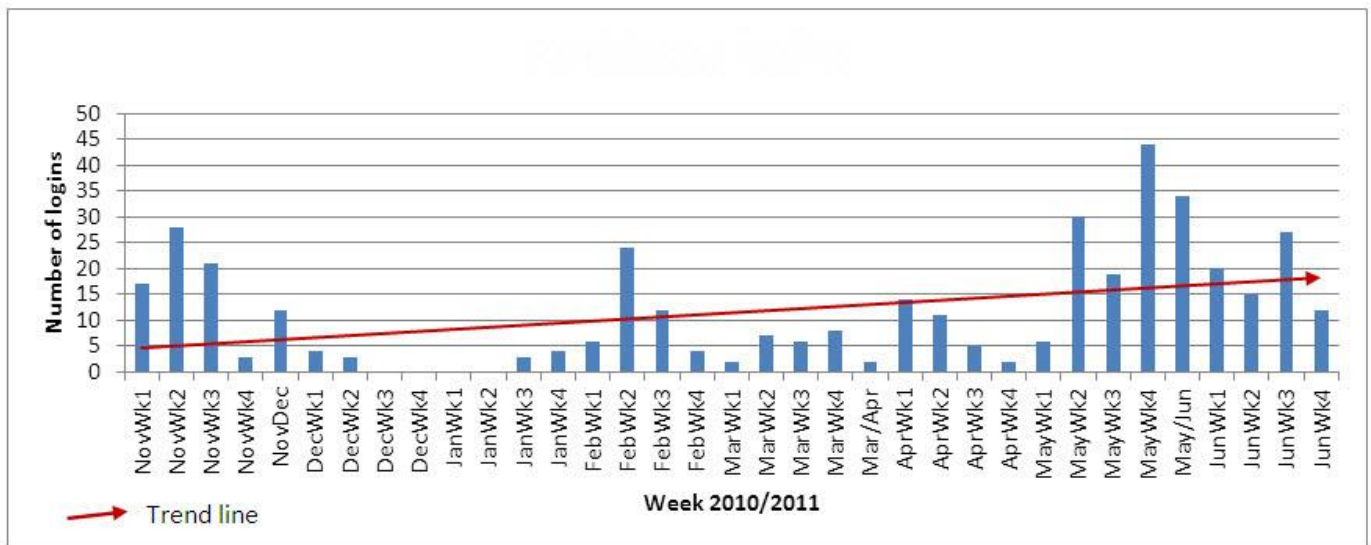


Figure 17: Participant logins during Phase Two, meso-cycle one with a trend line indicating an increase

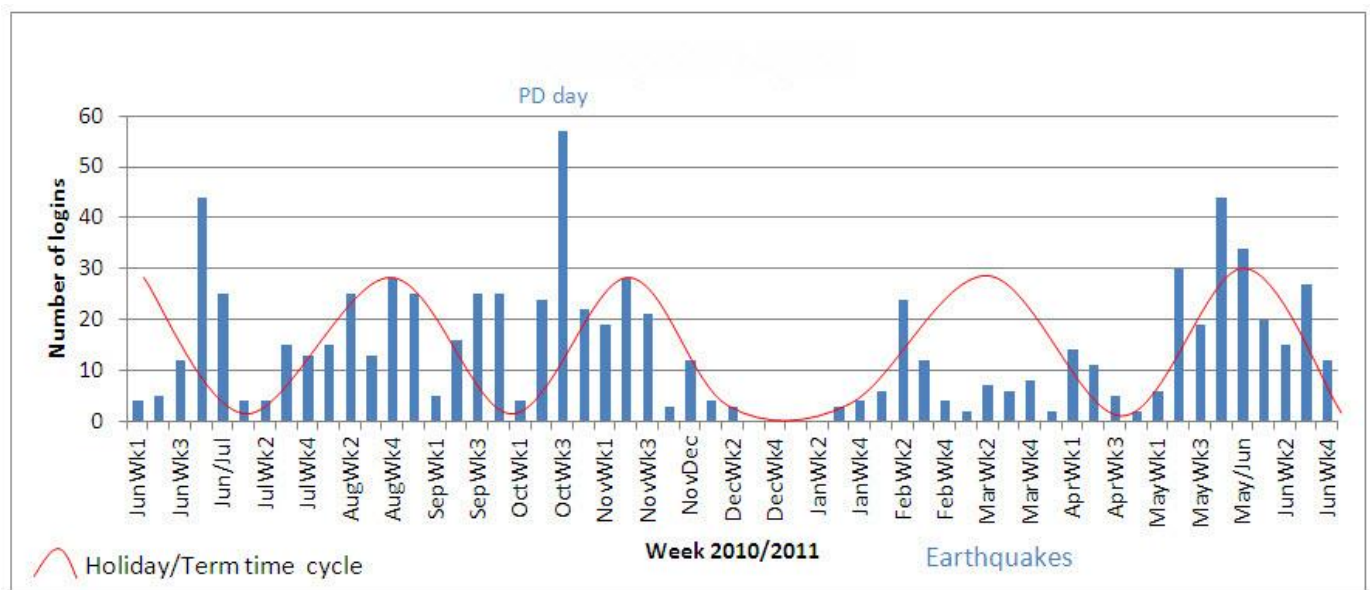
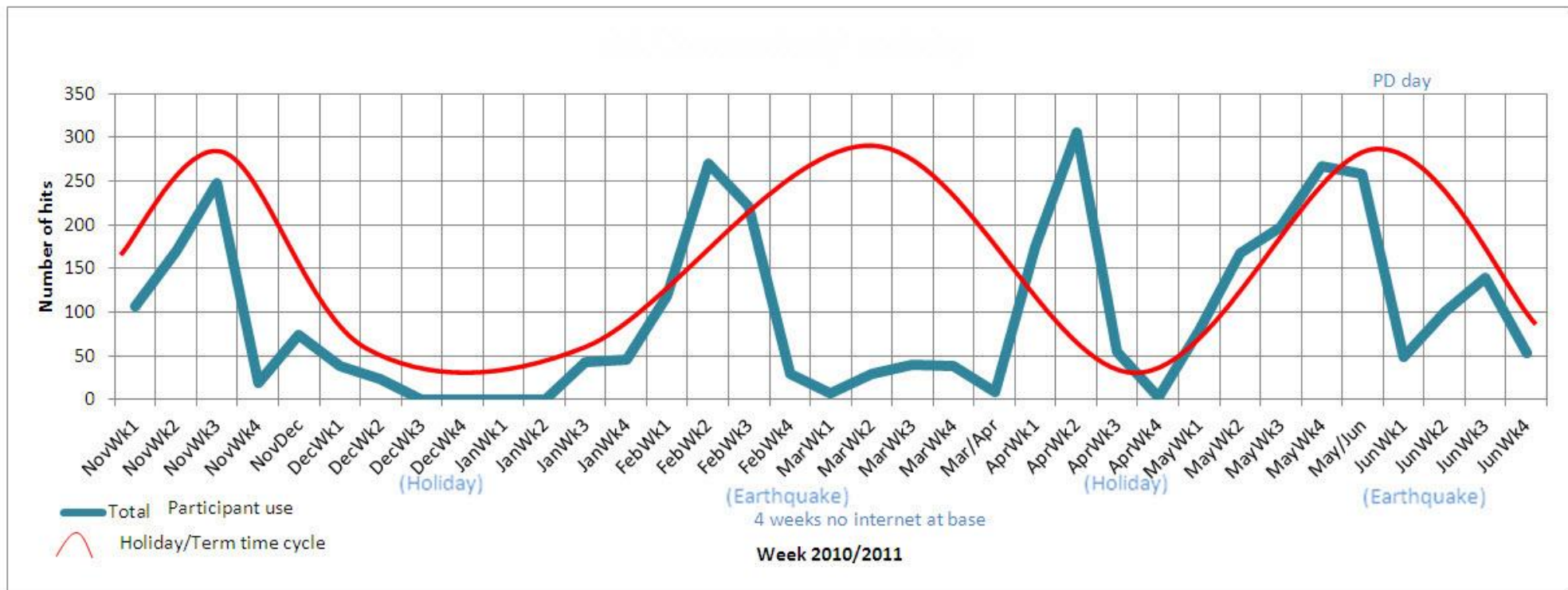


Figure 18: Participant logins during Phase One and Phase Two, meso-cycle one showing the cycle of gradually increasing activity in term time and decreasing activity during holidays

#### 4.2.1.4 Participant activity

Site activity as well as logins was found to follow the holiday/ term time cycle and was adversely affected by earthquake related circumstances (see Figure 19). The peaks in use both before and after the major disruption of the February earthquake indicated that site use during this time may have increased had these events not taken place. Increases in activity which did not fit into the holiday/term time cycle of use, also followed periods when access to the site was limited by earthquake related events, or were linked to staff PD days. Any correlation between redesigned elements in the site and a change in site use may have been influenced more by the time at which the changes were made, than by the changes themselves.

The patterns of participants' activity within Tutors Only varied for participants with different work foci (see Figure 20). The office administrator's activity gradually increased throughout this phase, with the exception of the four weeks without internet access. Her activity also followed the holiday/term time cycle because towards the beginning of the term there would be a week of high activity while she updated the site with whatever was needed for the term. The manager's activity remained fairly regular throughout this phase, with periods of activity every two or three weeks. The lead tutors' activity increased as they added content to the site for other tutors, particularly Annie who has responsibility for the national standards assessments documentation. The activity of the other tutors generally followed the holiday/ term time cycle.



Timeline of major re-design events

'Working Groups' category created  
Calendar starts being used

'Bragbook' added to Main Page

Navigation further simplified

Tutors Only  
redecorated

Figure 19: Total activity in 'Tutors Only' showing the holiday/term time cycle and major events, displayed alongside a timeline of Phase Two, meso-cycle one major redesign events

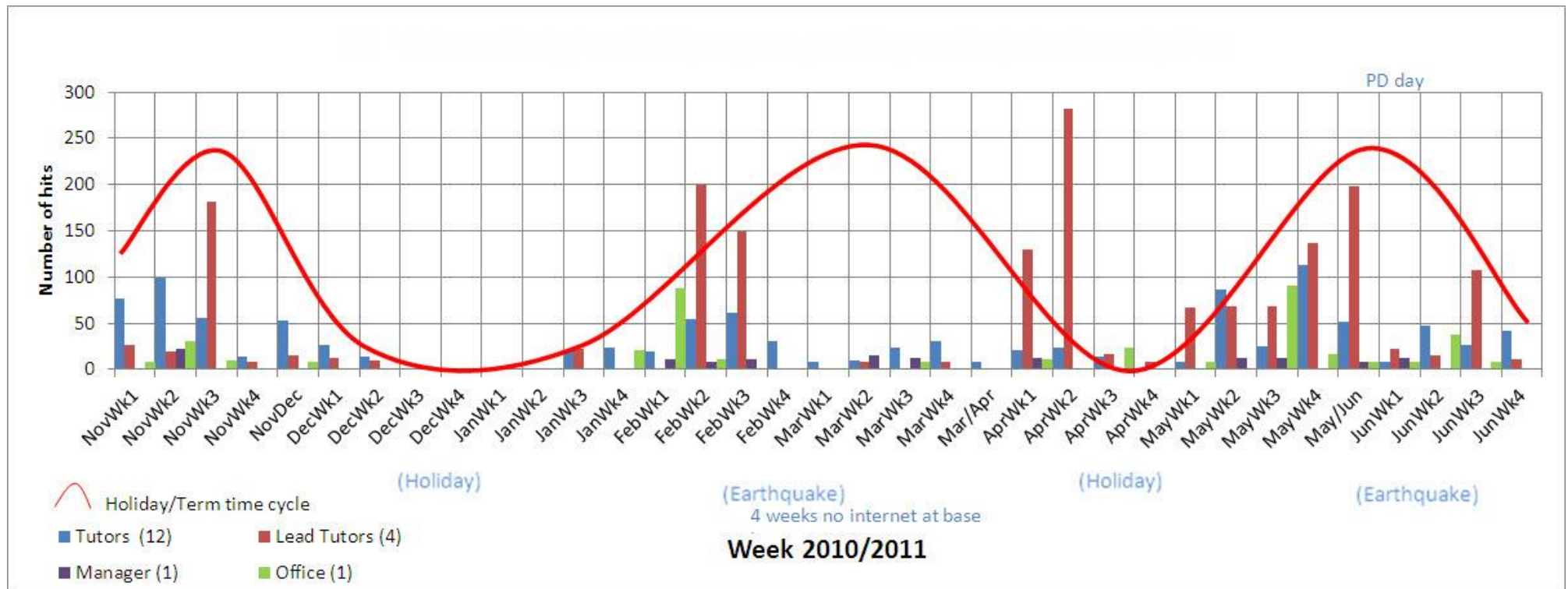


Figure 20: All 'Tutors Only' activity by grouped by participants' work focus, showing the major events and the holiday/term time cycle



## 4.2.2 Participant engagement

Participant engagement in the online environment was considered in terms of both 'active' and 'passive' engagement in the same way as in Phase One. Active engagement changed the site in some way and included uploading documents, creating links to content, adding text to a section within labels, and posting within forums. Passive engagement changed nothing in the site and included viewing the site and its activities, and accessing and downloading site content.

### 4.2.2.1 Passive engagement

Of the tutors who were participants in the ALEC Moodle site for the whole phase, ten tutors remained as mostly passive participants within Tutors Only. Five of these tutors participated actively an average of less than once for each week they logged in, the other five tutors had no 'active' engagement in the site at all. The site logs and interview data indicated that there were two main 'passive' uses of the site. These were finding information regarding people or events in the organisation, and viewing or downloading resources or administration documents; especially the assessment documents, which accounted for 58% of all resources viewed or downloaded during this phase of the research.

Interviews revealed three main reasons why tutors did not actively participate in the site. Some felt that active involvement online was not something that suited them. Ken explained, "I think I use Moodle a bit less than others ... I was a bit slow to get to use it. I'm not a Facebook user. I'm mildly technophobic" (Ken, Phase Two interview). Some tutors' use remained passive because a lack of IT infrastructure or lack of 'headspace', caused by the disruptive and sometimes traumatic earthquake events, that made active engagement online at that point in time too difficult. Other tutors use the online environment passively only for necessities, "It's there [online], I can get it, I can download it, and then I can move on to doing other prep activities" (Barbara, Phase Two interview).

### Community Information and Communications

Tutors Only continued to provide a way for tutors to acquire the information and resources they needed to engage in their practice as well as making it possible for those who work away from the home base to remain aware of what had been happening, "[The online environment is there] to let us know what's going on in our community. That's pretty important. Getting us in touch you know. I mean especially for people like us Community people who are not ... here" (Nancy, Phase Two interview).

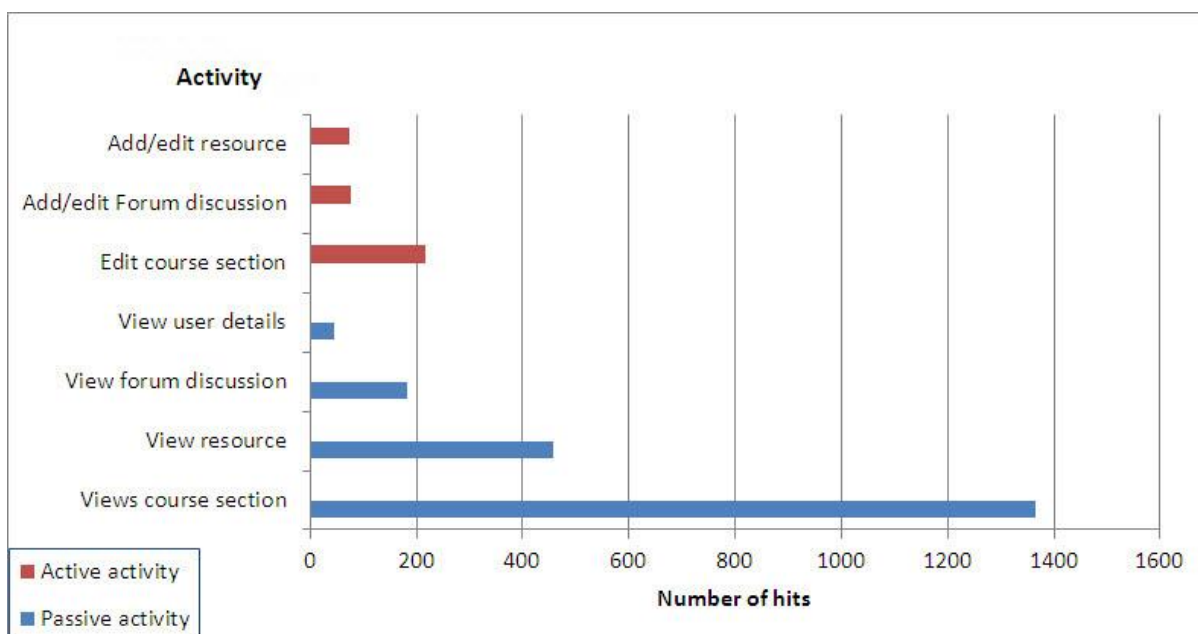
The organisation's events could be viewed on the calendar on the Tutors Only Main Page, instead of just on a whiteboard on home base office wall. Tutors found this very helpful. A lead tutor explained, "The biggest thing I use it for at the moment is just checking when our next staff meetings are. Because it's in there... it notifies people when there is a meeting. I mean like when they say, 'Oh, didn't know there was a meeting.' I can say, 'Look in there'" (Faith, Phase Two interview).

Viewing a section of the site constituted the majority of passive activity (see Figure 21). As George explained, his time in the site was often spent, "looking at the Tutors Only and working out whatever information I need, and then whenever I have any spare time I will have a look at what other people are doing and glean ideas from them" (George, Phase Two interview).

While forum posts were emailed out to tutors, they still came to the site to view posts in context within the forums. Sometimes the passive activity within the site was simply curiosity, “to see who is doing what, and having that contact, and being able to see what other people are doing, and use some of it” (Belinda, Phase Two interview), and sometimes it led to shared practice.

### Resources

Often tutor use of the site was more targeted. After viewing a Tutors Only section, the second most likely activity was to view or download a resource (see Figure 21). All assessment standards and administration documents are easily accessible on the site and this contributes to the participants’ use. “It gives me a place where I can access all this information, so if I need to get a template or a unit standard form, I know I can go on to Moodle and I know that it will be there. So, definitely it makes getting hands on some of those files a lot easier” (Annelies, Phase Two interview). For three participants this was the only reason they logged in to the site. “I only use Moodle when I want something - like going to the shop” (Barbara, Phase Two interview). Emailed forum posts sometimes led tutors to the Moodle site for resources. “[When] I get a notification by email to say that somebody’s added a resource, I will go on and check to see if it’s something that I will use or not” (Annelies, Phase Two interview).



**Figure 21: 'Tutors Only' participant hits by activity type, active or passive, during Phase Two meso-cycle one**

Recommendations from tutors sometimes encouraged others to use the site, “I wanted some sort of evaluation for something... and somebody said, ‘oh, there’s heaps of that on the Resources of Moodle, go and have a look there’ so I went and it was there” (Ken, Phase Two interview). Tutors Only has also helped the office administrator with resources for tutors,

I often get asked for unit standards [assessments]... I don't deal with unit standards, but I know there is some on Moodle, so I say 'I'll have a look on Moodle'. And if I go on into Tutors Only page... it's there... So, that's where I go, and if I see something there, well and great, I'll access it." (Agnes, Phase Two interview)

#### 4.2.2.2 Active engagement

Six of the participants in the ALEC Moodle site engaged actively, between once and twenty times on average, each week they logged in (see Figure 22). These tutors took part in three main activities; editing a section of Tutors Only, uploading and making available resources or administrative information, and taking part in a discussion with either a work or social focus. Interviews revealed that tutors actively participated in the site because they considered the use of the online environment to be both efficient and worthwhile.

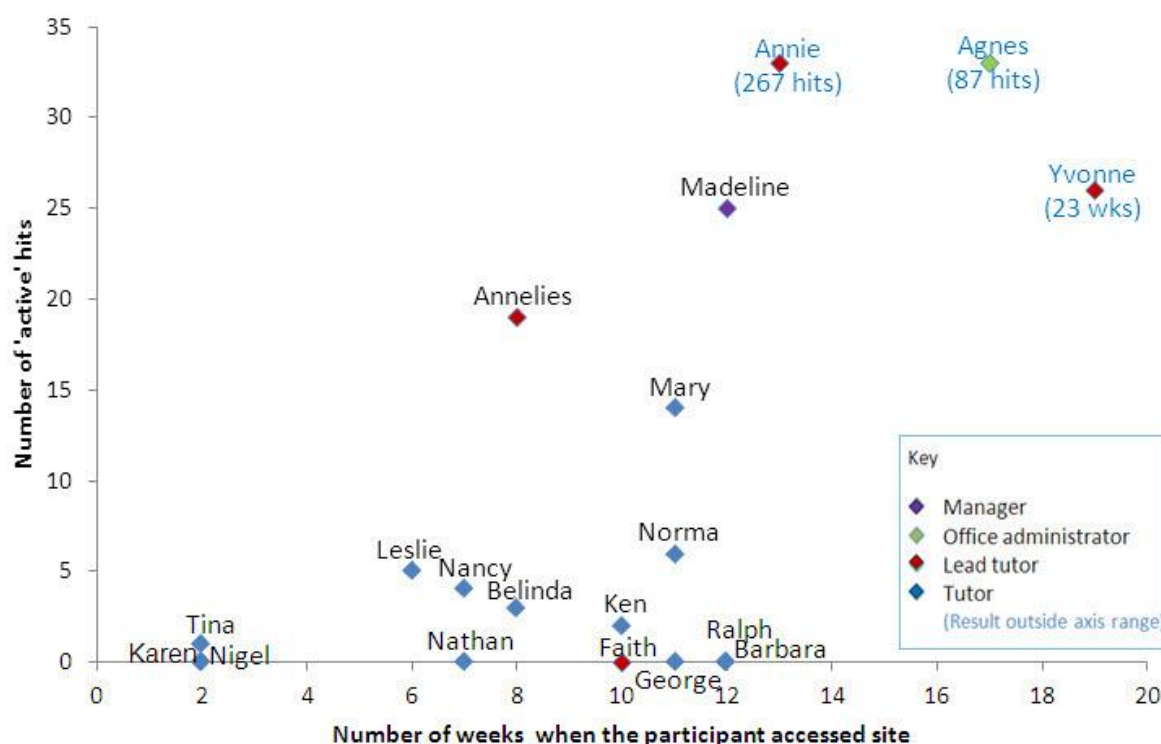


Figure 22: Number of 'active' participant hits per week and the number of weeks when the participant accessed the site during Phase Two meso-cycle one

#### Area of responsibility

Sometimes the active participation took place to fulfil an area of responsibility which was delivered in the ALEC online environment. As office administrator, Agnes's work during this phase of the research involved much more active use of the Moodle site than in Phase One. She uploaded most of the documents for administration and informed the tutors of meetings and events. She added

links on Tutors' Only to files and websites which the tutors needed to access, posted regularly in the "News and Notices" forum and added events to the online calendar.

I use the calendar a lot because it saves them ringing me and asking me when the next meetings are, because they don't come into the office very often. For them to just go into Moodle from home, at any time, is much more efficient. ...I also like to upload different forms on to the Moodle site because it saves them, again, coming in. (Agnes, Phase Two interview)

As the tutor with responsibility for national assessment standards, Annie's work also made active use of the online environment. Her activity focussed on the "Unit Standards" section of Resources where she added links to national standards assessments, documentation and resources.

When I think about it ... we probably couldn't do without it [the online environment]. With a bigger staff it actually has been really important that we've been able to keep the units on there, in electronic form rather in paper form... because the versions keep changing that means I can keep a track of that, and put up the new version ... You couldn't do it any other way now. (Annie, Phase Two interview)

The lead tutor with responsibility for resources had an active period on the site early in 2011, but circumstances made it difficult for her to continue to be active in the site. The other two lead tutors also had the 'teacher' role which allowed them to add resources to the Resources of Tutors Only, but they did not see this as a priority in 2011. The ALEC manager found the online environment to be a valuable addition, particularly for organisation wide communication.

## Forums

Tutors were able to share resources by attaching them to posts in the Resources forum. Often this active engagement encouraged an increase in passive activity within a forum by other tutors as they came online to see the resource. "I know that a lot of the tutors will have uploaded a resource, and then I can see that they [other tutors] say "Great thanks, I will use that as well" (Agnes, Phase Two interview). Some of the resources shared through forums were links to websites,

When anybody comes across something really good that they think of as a good resource they will say, 'Click, or go in here', and there it is, isn't it? So, there's a real sharing thing as, 'I have just found this great thing and here it is' Click on here ... so it's really good. (Belinda, Phase Two interview)

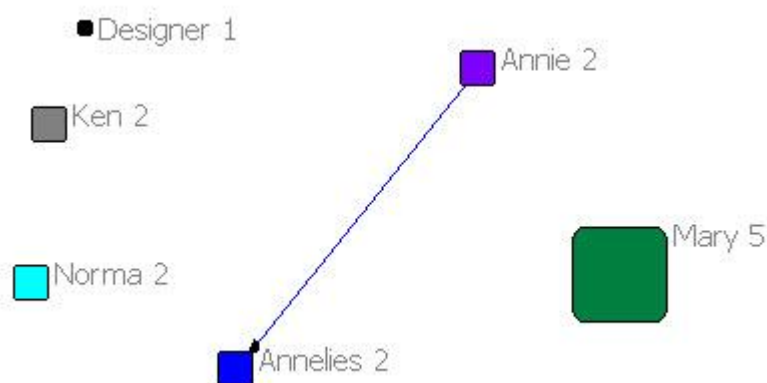
Resources were sometimes shared in response to a request. "I've put [a request] out for something and got responses from people which is helpful" (Mary, Phase Two interview).

A network diagram, indicating the numbers of posts and the connections between those posting in the Resources forum show that the majority of posts in this forum are single posts sharing a resource, and that conversations or discussions are few (see Figure 23).

Not all forum activity related to resources took place within the Resources Forum. Resource information was sometimes shared in other forums. The developer was aware of the difficulty this might cause.

I still want them to feel that it's their space, but I need to explain how important it is that things are in the most appropriate place, because it can be so frustrating looking for things when there are a number of possible places. (Design narrative 28/5/11)

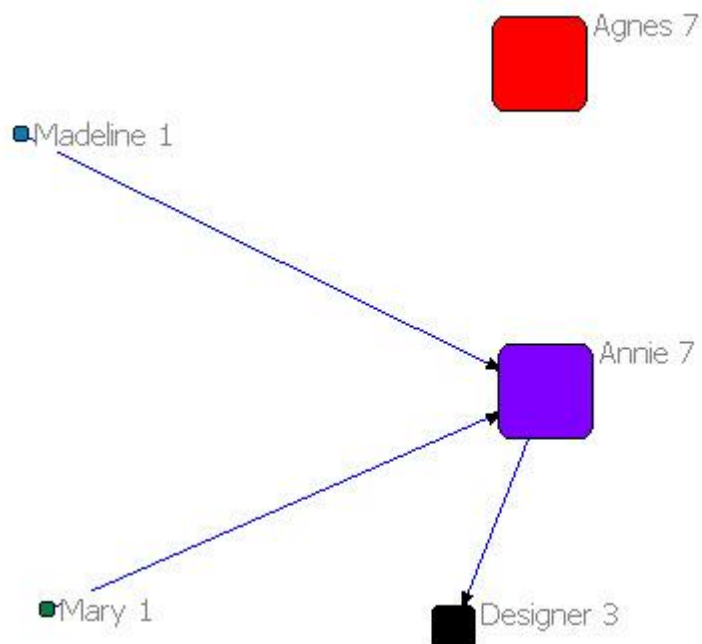
She took the opportunity to explain the purposes for the different forums at a staff PD day, to clarify the forum use and reinforce the importance of posting in the most appropriate forum.



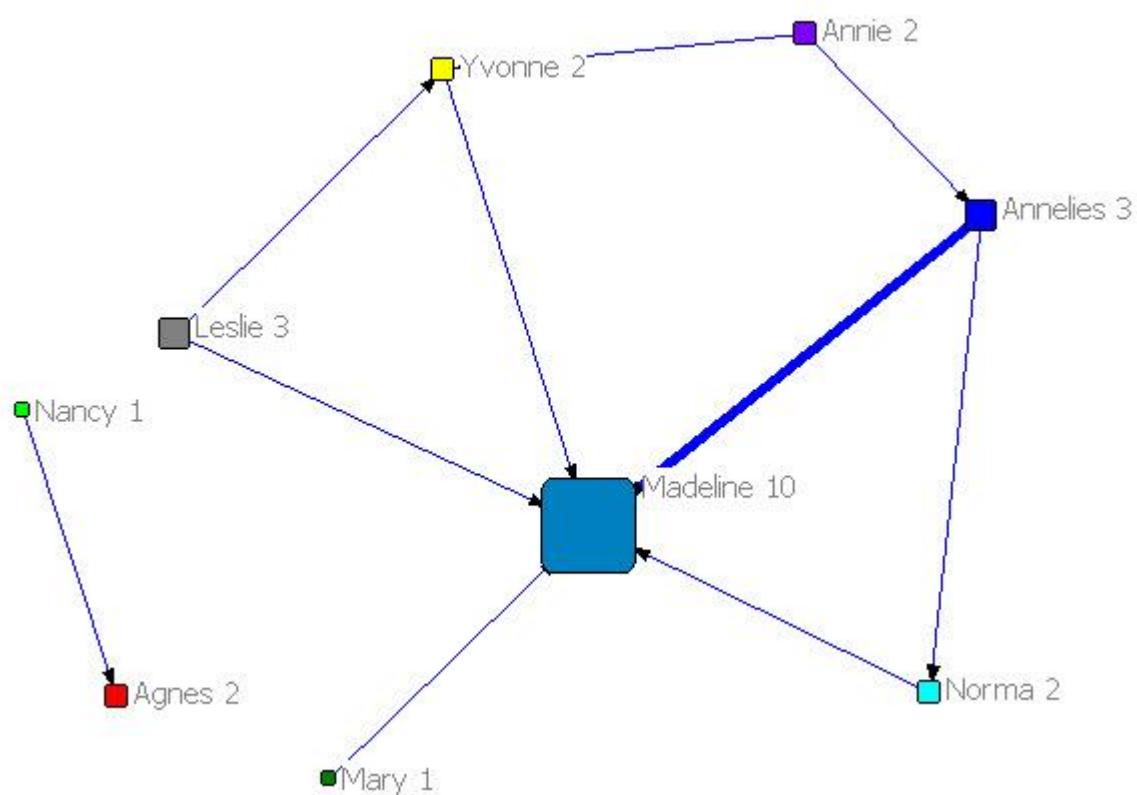
**Figure 23: Network diagram for the Resources Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines**

The News and Notices forum was mainly used by Agnes to disseminate information which would previously have gone into the weekly newsletter, and by Annie to give information about the assessment standards. This can be seen in the network diagram of forum postings (see Figure 24). The manager remained central to the General Discussion forum and it was fuelled by her forum posts. Madeline used this forum to encourage discussion prior to staff PD days; more so in 2010 when the tutors were providing much of the content themselves, than in 2011 when the day was organised around a guest lecturer speaking on adult numeracy education. This forum also contained discussions on teaching practices and its value was recognised. "The general discussion has really helped my professional performance I think" (Ken, Phase Two interview). This forum was the most active of those on the site (see Figure 25) and had the potential to become more so as tutors saw the possibilities for its use. As Norma explained,

We just need someone to start putting into practice, yeah. You know, 'I had a great idea. This is what I did today' and 'Who's got... Anyone want to pick it up, and make it better?' That's what I would like to see - the online community learning, more than just community sharing. (Norma, Phase Two interview)



**Figure 24: Network diagram for the News and Notices Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines**

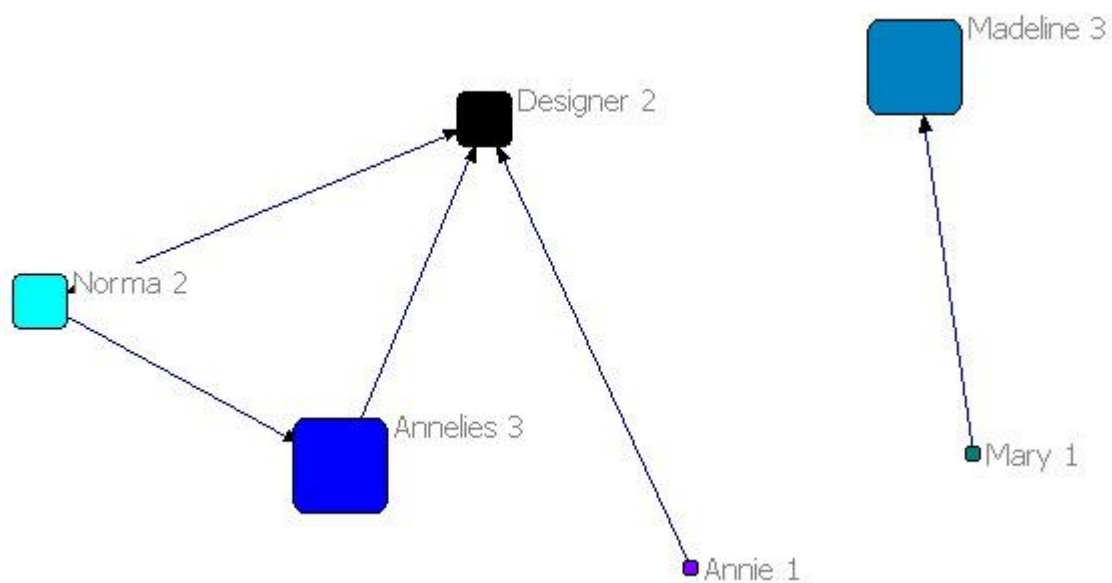


**Figure 25: Network diagram for the General Discussion Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines**

The Staffroom Forum was the area that tutors felt to be less relevant to their professional practice. While there was less activity in this forum, (see Figure 26) it did play an important role in developing relations online in this community particularly during the worst months of earthquake activity. As Agnes observed,

Especially after the earthquakes, I noticed people would put things on there about maybe how they are feeling ... It was also reaching out to everyone to make sure everyone was fine, and that was also a way for Madeline to get in touch with everyone ... We [ALEC] were closed, and I know a lot of people at home, and myself included, didn't have the internet to start with. But when we did, to see messages there was really nice, because you knew that people cared sort of thing, so that's brilliant in that way. (Agnes, Phase Two interview)

Use of the Staffroom Forum was not always positive, and at one point the developer was asked to remove a controversial forum post. As Ken noted, "There's been quite a bit of dialog about things like wages and conditions and such. Occasionally it's been slightly fraught with tension, but it's always resolved itself in the end, so I guess that's good" (Ken, Phase Two interview).



**Figure 26: Network diagram for the Staffroom Forum in Phase Two meso-cycle one showing the number of posts indicated visually by the size of the marker, and the connections between the participants indicated by the connecting lines**

Overall forum activity followed the same holiday and term time pattern as other online activity, with the exception of a high peak prior to the Professional Development day (see Figure 27). The views of forum posts kept more closely to this pattern. Forum posts were more dependent on individual events and the timing of information requested and provided. The number of forum posts increased towards the end of this phase as the number of earthquakes reduced and the community focussed on trying to restore 'normal' practice.



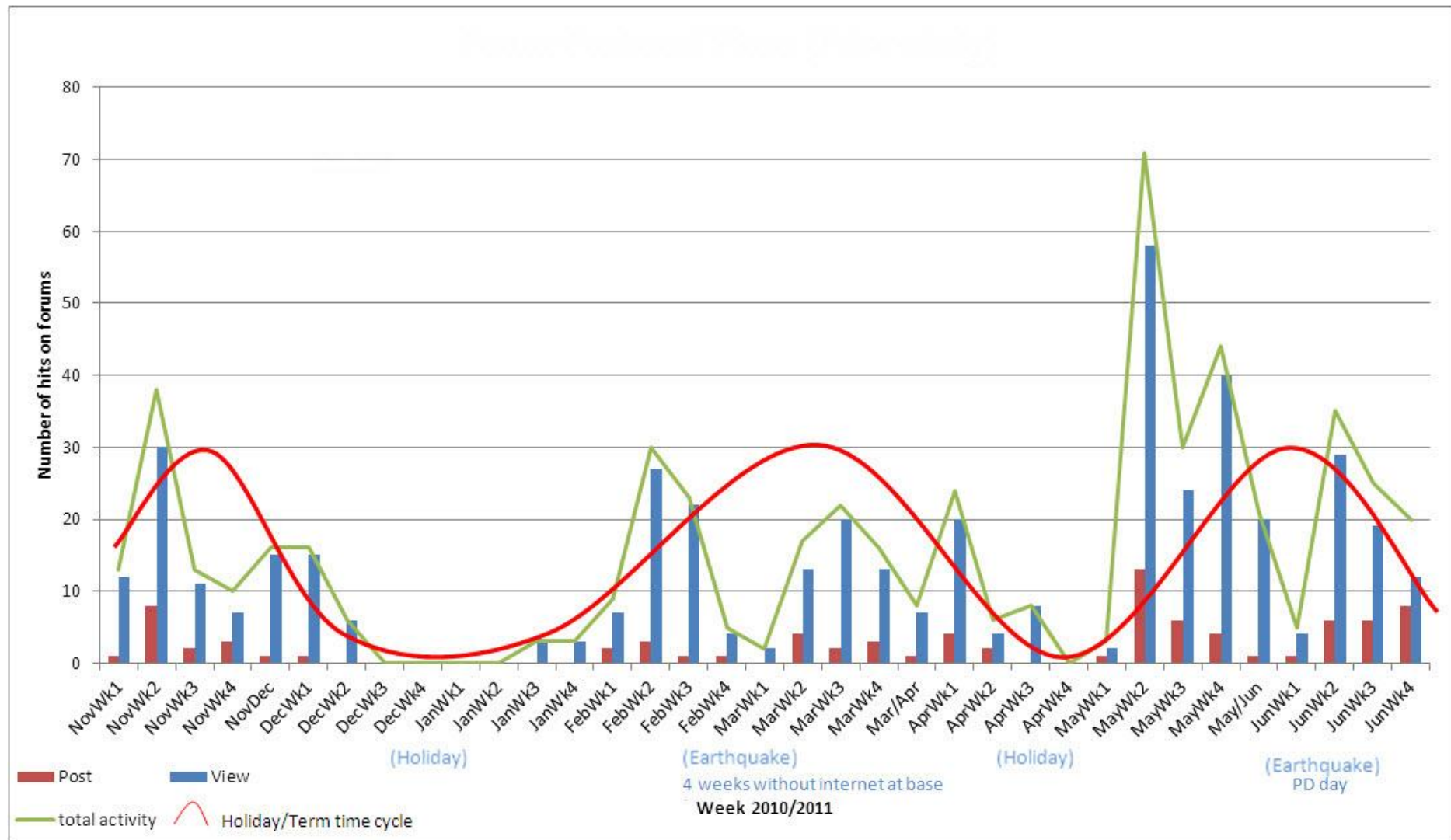


Figure 27: Activity, posts and views, in all Tutors Only forums during Phase Two meso-cycle one, showing total activity and the holiday/term time cycle



### Experimentation and further use

As well as those tutors who participated actively in Tutors Only in this phase, a group of three tutors extended their online practice and created online classrooms where their students could engage in e-learning. This activity is described in detail in chapter five. The patterns of use in Tutors Only, for these particular tutors, did not change when they developed their online classrooms. However, their overall online activity, particularly active activity, increased greatly.

Madeline, Agnes and Annie were the participants who used Tutors Only most during this second phase of the research, and they were happy to experiment with new tools as the needs arose. “I will play around, and so in a way it's quite exciting. And a lot of it I often do from home if I'm ... uploading something on to it, because then I've got the time to play around” (Agnes, Phase Two interview).

## 4.2.3 Infrastructure

As in Phase One, one of the greatest frustrations in using the online environment was that some tutors lacked the available Information Technology (IT) infrastructure to access it. This was compounded in Phase Two by the disruption due to ongoing earthquakes. “If I had an internet connection all day in my different workplaces maybe Moodle would be easier” (Annelies, Phase Two interview). The difficulties were greatest for those tutors working with community groups. Some of their teaching spaces had never had more than limited access to computers with internet, and due to earthquake damage some no longer had any at all. “It's kind of like ‘great’ because you have Moodle and all these ideas, and ‘Cool, we can do this’ and when it comes down to it, we can't connect, and it really does act as a roadblock” (Barbara, Phase Two interview). Because some tutors lacked internet access during the teaching day, there was uncertainty as to how soon after communication was posted online that tutors would be able to access it. This uncertainty led to Annelies, one of the lead tutors, choosing text messages rather than Moodle as the preferred method of sending information to her Workplace tutors. Most of the tutors' teaching preparation took place at home, and some tutors' home IT infrastructure continued to be inadequate for accessing Tutors Only resources, either because of older computer equipment or much slower internet access. The inability to quickly access printed copies or to print downloaded resources for clients was also frustrating for some tutors. This negative was balanced against the positive of knowing that all tutors were aware that the most up-to-date versions of the national assessment standards were the ones available online.

## 4.2.4 Key elements

From the informed exploration of Phase One of the research, three elements were found to be most important, namely: simplicity, relevance and connection. This continued to be true in the redesign and further development of the environment. Changes in the Moodle site continued to be aligned with this finding. Data from Phase Two meso-cycle one revealed two other key elements; leadership and adding value.

### 4.2.4.1 Simplicity

Simplicity was important in both the design and the function of the initial iteration of the online environment. The environment was made much more user-friendly through simple, easy to follow

navigation and support documentation which allowed community members to develop confidence online. A less plain and simple overall look to the online environment, however, was found to be more engaging and attractive to the ALEC community.

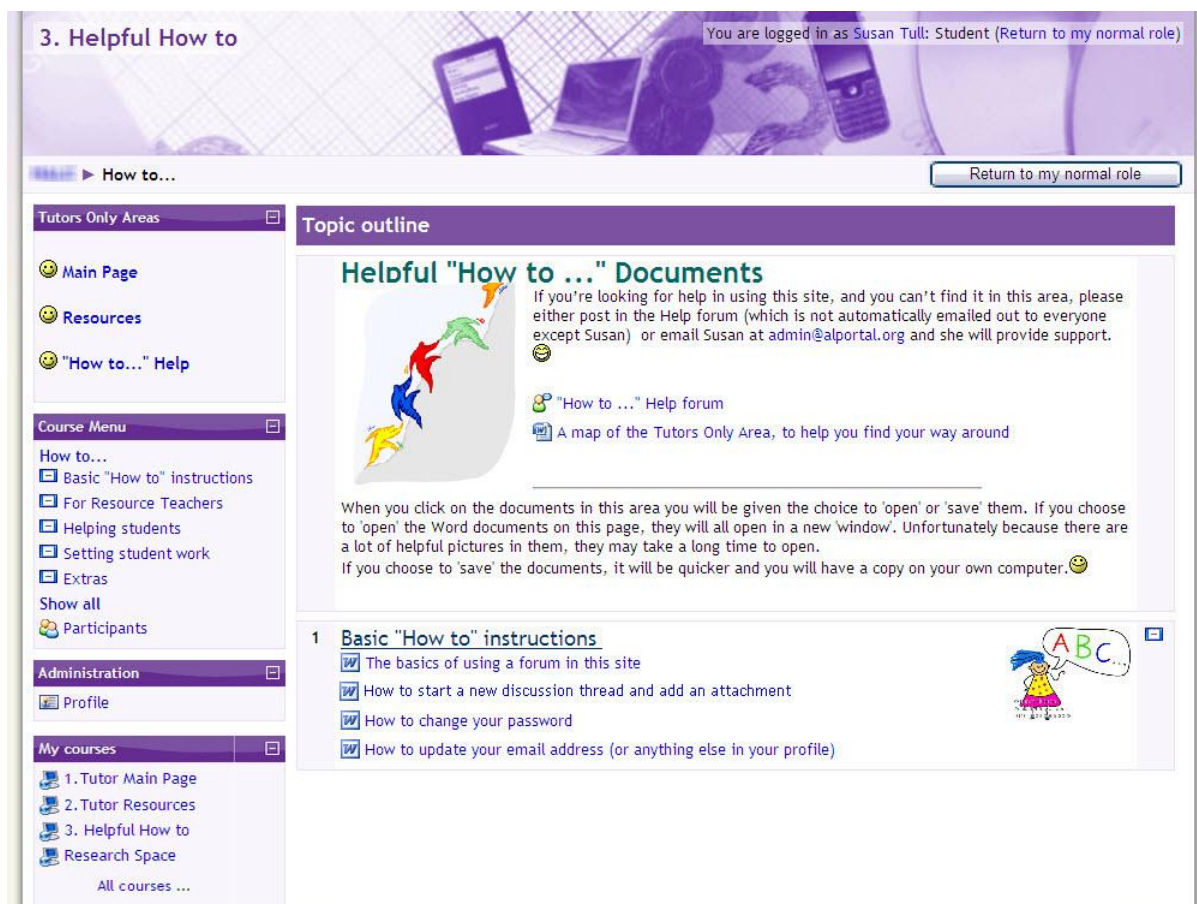
### Navigation

Several design decisions were made to maintain or improve the simplicity of the site navigation.

- The organisation of the whole site was formalised into categories; Tutors Only, Working Groups, and Classrooms.
- Tutor feedback regarding the use of slightly different names for Resources, lead to the developer's deliberate standardisation of naming conventions.
- The navigation block for Tutors Only became identical in all three spaces, to reinforce their connection as parts of the same area.
- Feedback also supported the developer's decision to implement a standard layout for all Tutors Only spaces. Each area had the 'Tutors Only' navigation block at the top left and the 'My Courses' block at the bottom left.

The "Resources" and the "How to..." contained a navigable contents list of sections which appeared in the 'Course Menu' block, added consistently on the left between the other two blocks (see Figure 28). The Main page held very little in the way of stored content so it did not require a 'Course Menu' block, but did include the calendar and 'upcoming events' on the right as well as the standard blocks on the left. The developer had also added a link to the Research Space (see Figure 29).

The developer created the spaces within the Working Groups category with this same layout. The only exception was the Research Space which was deliberately constructed in an alternative layout so that it wouldn't be mistaken for a permanent part of the ALEC site. Only one tutor felt that the navigation could be improved. All other feedback on the navigation of the site was positive, "It's easy to locate what you want, take what you want, and bang, you can go out - definitely" (Nigel, Phase Two interview). "I think it actually is quite easy to use now" (Madeline, Phase Two interview).



**Figure 28: Tutors Only How to... (June 2011) showing the standardised format with the Tutors Only navigation block on the top left and the 'My Courses' block on the bottom left. The 'Course Menu' can be seen between them, and the first section of the space is visible.**

The convenience of being able to access resources quickly and efficiently within the online environment continued to be seen as a desirable improvement over the previous paper based or 'First Class' system. Following comments made in Phase One interviews about the large number of headings in Resources, it was further reorganised to develop it as a simple, user friendly space for storing and finding resources. The developer consulted with Annie and Agnes, who both added content into this area regularly, to develop broad category headings under which to organise the resources. These replaced the original headings from the previous system of resource storage (see Appendix G) in October 2010 (see Figure 30). The developer explained that this reorganisation was undertaken "to highlight the areas that were relevant to the tutors. Many of the [existing] headings were for elements which are not relevant to the teaching of many tutors, and so they were empty" (Design narrative 18/10/10). The changes were well received. "What I saw this afternoon with the alterations. That's a big plus, big plus. More concise, clear" (Norma, Phase One interview).

1.Tutor Main Page

You are logged in as Susan Tull: Student (Return to my normal role)

Return to my normal role

MainPage

**Tutors Only Areas**

- Main Page
- Resources
- "How to..." Help

**Administration**

- Grades
- Profile

**Quick Link**

Visit Susan's Research Space

**Search Forums**

Advanced search ?

**My courses**

- 1. Tutor Main Page
- 2. Tutor Resources
- 3. Helpful How to Research Space
- All courses ...

**Topic outline**

**Our News**

- News and Notices
- Newsletters
- NZ Literacy Portal Update

**1 Our Talk Space**

General Discussion Forum

For discussions questions and answers on any work or website related topic.

The Staffroom

A social space for tutors to chat about anything else. 😊

**Upcoming Events**

- Timesheets due Tomorrow
- Workplace Meeting Monday, 11 July
- Timesheets due Friday, 15 July
- Go to calendar...
- New Event...

**Calendar**

June 2011

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

**Events Key**

- Global
- Course
- Group
- User

**Recent Activity**

Activity since Thursday, 30 June 2011, 12:43 PM

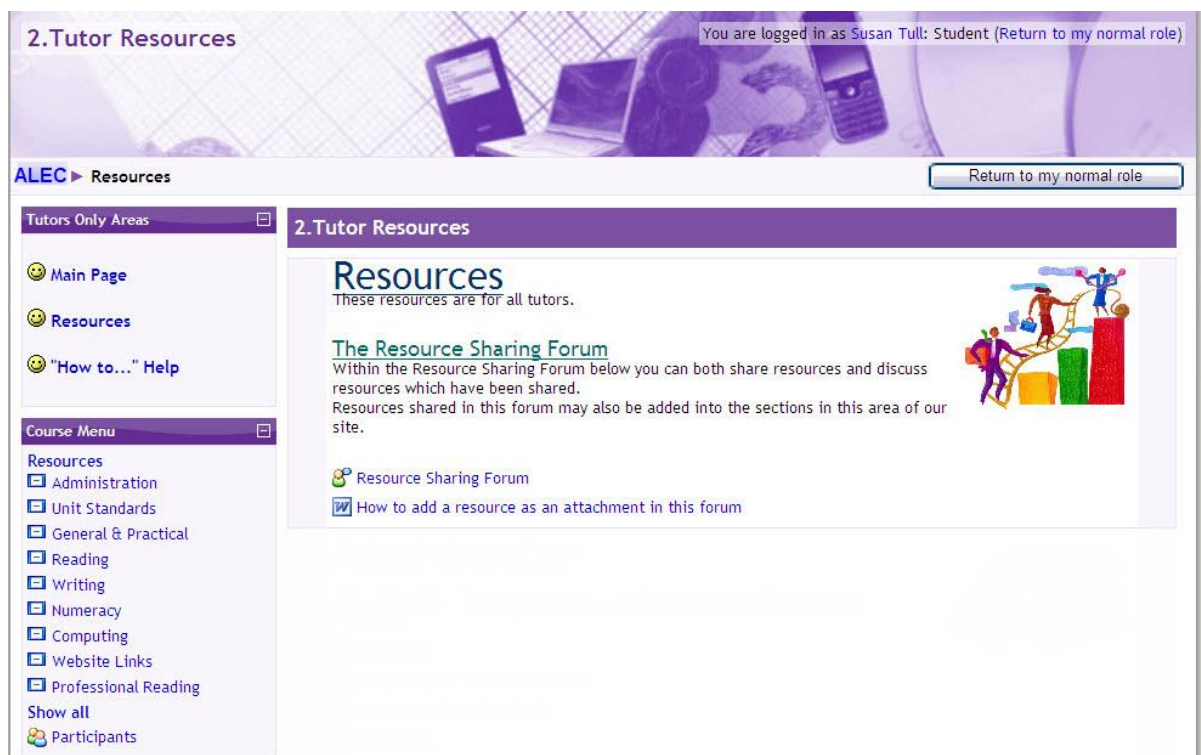
Full report of recent activity...

Nothing new since your last login

**People**

Participants

Figure 29: Tutors Only, Main Page (June 2011) showing standardised format with the Tutors Only navigation block on the top left and the 'My Courses' block on the bottom left. The link to the Research Space can be seen between them. On the right is the calendar and its associated upcoming events display.



**Figure 30: Resources - Tutors Only area (June 2011) front page, showing the simplified structure in the 'Course Menu' on the left**

## Support

Support documentation continued to be added to the site throughout Phase Two. As staff expanded their use of the tools available in Moodle, support documentation was created and added to Tutors Only, How To. This documentation was made up of screen shots of the ALEC site with supporting text, to provide contextually accurate support (see example in Appendix H: Support documentation example). These clear step-by-step support documents were sufficient and support was only provided in person three times during this phase of the research. While the developer met twice with Agnes to introduce her to completely new tasks; adding calendar items and working with images, Agnes emphasised the value of the documents for support, "You just print it off, and because it's been laid out in easy to read, easy steps to follow, you don't need to ask anyone. You can work your own way through it, so yes, very valuable" (Agnes, Phase Two interview).

The earthquakes had made this a particularly difficult year for the staff and while some tutors made the online environment their focus, others felt that no amount of simple support documentation would have got them to the stage where they could have engaged more with it. The developer met with Faith, the Community team lead tutor to refresh her understanding of the more active online practice. She felt "the easiest part [is] getting on there and finding stuff, but the actual putting stuff on it still ... a couple of times I have thought... no, that's a little too hard for my brain at the moment" (Faith, Phase Two interview).



### Aesthetics

The overall look of the Moodle site continued to be important in engaging the tutors within the environment. The developer too began to see the importance of the aesthetics and the way in which it made the tutors feel about the online environment. Tutors in Phase One interviews had said the 'standard' Moodle theme was too plain and white, so a Moodle theme called 'Metal', which looked like brushed aluminium, had been used to replace it with something that looked more interesting but was still business-like. After the third major earthquake in six months, the developer wrote

I felt it was time to redecorate Tutors Only. It has had the 'Metal' theme for the last 6 months and at the moment it just seems a bit grey and bleak, so I've opted for Mahoodle2009 which is a purple theme and probably a bit on the girly side, but at least it's a bit brighter. (Design narrative, 21/6/11)

The forum post notifying tutors of the re-decoration quickly received four positive replies. Feedback gathered weeks later was also positive, "Once Moodle sort of became a little more cosmetically attractive, it was easier to hang around a bit longer otherwise it was just like another piece of paper that I had to open and look at and tick the boxes and get out of again" (Annelies, Phase Two interview).

#### 4.2.4.2 Relevance

The relevance of the site content continued to be important in engaging community members within the online environment. Relevance to their professional practice encouraged the tutors to use their limited time to engage beyond accessing resources in the online environment. One important element which aided in this goal was the inclusion of community input. Because of the design-based research approach used, suggestions for what would be most appropriate for the community within this space came from the community members themselves. The process of site development was very much an open one. Tutors could make suggestions through the General Discussion forum or by emailing the developer directly, but the majority of suggestions were made during interviews and meetings where the focus was on reflecting on progress and looking at future development.

#### Fulfilling existing community needs

Tutors Only supported the ALEC community in its two main areas of need: communication and resourcing. It continued to be the repository for all the administration templates and forms, and for the shared resources of the community, particularly the national standards assessment documentation. As one tutor commented of the site's usefulness, "As a busy person, it's being able to access information quickly and concisely and with minimal fuss and hassle that's probably what is of value to me" (Barbara, Phase Two interview).

One of the strengths of Tutors Only was that it was able to fulfil many of the developing needs of the existing community. Changes and additions to the site were made based on these needs. Some of them were fulfilled in the initial site design, but as staff identified community needs which were not being adequately met, the developer implemented solutions within the online environment. The use of the calendar to display dates for regular meetings and special events, and the addition of wikis to the Main Page late in 2011 to display the agendas of upcoming meetings and allow tutors to add agenda items themselves, were two of these solutions.

The folder containing the weekly newsletter was removed following the interviews in 2011. As a consequence of having the Tutors Only area with its ability to easily send information to all the tutors, the newsletter was no longer needed. Agnes explained, “Moodle is our newsletter. So anything that Madeline or I ... would like to get out there to the tutors goes on Moodle because everybody is in there, and it goes to everyone” (Agnes, Phase Two interview).

### **Focus on ideas and topics important to the community**

For the community to engage in the online environment there needed to be a focus on topics which were important to the community. The focus of this community of practice was very much on adult literacy teaching and providing the best services to their clients. Community members initially did not participate within the online environment because they did not see its relevance to their practice. This changed as the sharing of teaching resources online increased. Most tutors recognised the benefit of readily available online resources, and some tutors took the opportunity to share their resources, but this wasn’t the case for everyone. The one tutor who taught second language speakers explained, “What I teach is something which is very separate from what other tutors are doing ... so in that respect it [Moodle] is not any help to me unless I put resources up there that I want to use” (Nigel, Phase Two interview). During this phase of the research, some tutors who were reluctant at first, came to see the potential that the online space has for continuing the ‘core business’ of the organization, “At first it was all a bit beyond me as to what the purpose of it all is. Now, I fully endorse having it” (Faith, Phase Two interview).

As well as using Tutors Only, three tutors chose to establish a ‘Classroom’ course for their clients within Moodle. Reports from the participants themselves and from others in the organization who had observed their reactions to adopting this e-learning tool within their practice have said, “They love it!” (Agnes, Phase Two interview). In their online classrooms, as elsewhere on the site, the use of the online environment still needed to be relevant. “Everything I put on my site [online classroom] or everything I use Moodle for has to be directly relevant to what I’m doing or otherwise I’m wasting precious time, really” (George, Phase Two interview).

### **4.2.4.3 Connection**

One of the manager’s goals was, “to see them [ALEC] functioning as a whole group” (Madeline, Phase Two interview) by drawing the At-Base, Community and Workplace teams together. Tutors spoke of the Moodle site as having accomplished this.

It has become quite a little social centre. It tends to bind us together. We say, ‘Oh, haven’t you just seen ... Haven’t you looked at Moodle lately?’ And oh, so you are a bit out of the loop if you don’t check it. But it has... I think it’s fair to say it’s engendered a feeling of community between us. That’s another way to join us together and make us feel we’re all on all the same team. (Ken, Phase Two interview)

While the three teams of tutors operated quite differently, the site supported them all. For those tutors whose work was either out in the wider community or in clients’ workplaces, it kept them connected. Community tutor Nancy explained that the ALEC site was, “pretty valuable for keeping us in touch with the community when we are pretty isolated otherwise” (Nancy, Phase Two interview). Workplace tutor Norma said, “I’m going in [to Moodle] to see what people said, it could be a little

nosy around. It is not often that I'm [physically] on site, so it's often a way of maybe catching up" (Norma, Phase Two interview). The online environment enhanced their connections within the community, as well as any face to face contact that took place for those who work At-Base. "By just sort of reading what they say, and reading their postings and stuff... when they [other tutors] do come in, I've got something I could kind of talk to them about; something more relevant, something more... I've got a sense of what they have been up to and that sort of thing" (George, Phase Two interview). For those who already had connections it was "just another way of re-establishing those connections" (Annelies, Phase Two interview) and keeping them current. Communication within the organization became more open. The ALEC online environment became, as one tutor described it, "the only forum we do have where we can be in touch with every tutor, except the Christmas function" (Norma, Phase Two interview). The manager felt that communicating through Tutors Only was "nicer because they have the opportunity to actually reply back, with everyone seeing it - that's an open forum" (Madeline, Phase Two interview).

Tutors began to see the potential the site had for future use for their community of practice. "I think that we could make much better use of it; I can see the potential for being able to contact the tutors so much more easily" (Faith, Phase Two interview). Mary describes the site as "reminding me that I'm part of a bigger group and that there are other people out there with shared experience" (Mary, Phase Two interview).

#### 4.2.4.4 Leadership by example

A third of the tutors suggested that some of the potential within the ALEC online environment was untapped because of a lack of direction in its use, but leadership within Tutors Only could not be implemented by the developer. ALEC was referred to by tutors as a democratic community and they expressed reluctance to changing that in any way. Three tutors disliked the idea of having one person lead the community online. Leading by example seemed to be the format preferred by ALEC members, and as George suggested, "in terms of leadership - mutual inspiration, possibly, more than leadership " (George, Phase Two interview).

After analysing the data from discussions with staff, the developer recommended to the manager that several members of the community could be encouraged to take on particular areas of responsibility. The tutors undertaking these responsibilities did not need to be the lead tutors, but should be tutors who had an enthusiasm for online involvement in the community. Having several more experienced tutors taking responsibility would mean that, rather than being lead or feeling pushed, people could be encouraged by their peers and have examples to follow. The manager agreed that this was a good idea, but these responsibilities were not undertaken until the end of the research.

Lack of engagement within the online environment by two of the three lead tutors made the full integration of ALEC into a blended community more difficult. These lead tutors were more comfortable with interacting through the means they had used prior to the online environment being implemented, so information was not being shared by them within the online environment. Communication for their two teams often took place by personal email or by text rather than through the online community forums, and even the sharing of resources by those two teams sometimes took place by means other than online. The tutors in these teams initially had very little



reason to engage in the online environment at all. Eventually many of them came online to access administration documents, but their engagement during this phase of the research was never at the same level as those tutors whose sharing took place in the online environment. While some tutors felt that their practice might be improved through the community as a whole sharing more in discussions, and giving examples of practice in the online environment, others felt that a change in the use of the online environment was not needed. Tutor comments supported the view that there was already little enough time available to use what was presently online, and that it did not need to be improved. “I think it’s working well at the moment, so don’t fix it is my clichéd answer” (Ken, Phase Two interview).

#### 4.2.4.5 Adding value

Tutors Only continued to add value to the tutors’ professional practice through the provision of easily accessible resources online. Other aspects of Tutors Only were appreciated such as the unsolicited distribution of tutors’ resources suggestions. As one tutor realized, “It’s no different than [another tutor] leaving a copy in my pigeon hole” (Norma, Phase Two interview). Personal professional development in other areas has been noted, such as administrative efficiency, and computer confidence. One lead tutor commented, “I can handle less and less hard copy, and shuffle files and paperwork electronically ... It just means you can pass on that information a lot more efficiently” (Annelies, Phase Two interview). The office administrator explained how actively participating in the online environment had been valuable for her, “It’s given me more confidence to go in, and do things because I’m not scared of breaking it” (Agnes, Phase Two interview). The suggestion was made by both tutors and lead tutors during Phase Two interviews, that adding exemplars and partially completed administration templates to the site could also reduce the time spent on administrative tasks. For at least one tutor the Moodle site has added value in several areas,

It’s broadened my resources, and it’s sort of made me a little more efficient in terms of the administration side of it. And also it’s made me a little more confident with computers as well. I don’t naturally use them a lot and it’s made, in terms of my professional practice, it’s increased my confidence using networks and getting around the internet and stuff like that. (George, Phase Two interview)

The elements which added value and were most likely to support the community were those directly related to their teaching. Tutors such as Norma, who had only used the Tutors Only category at this point in the research, were beginning to consider the ways in which the online environment might enhance learning for their clients outside normal teaching hours. Rather than using email, Norma now considered making content and activities available through the more efficient medium of the Moodle site. As tutors became more familiar with the online environment they were able to see its potential for adding further value to their practice. “It’s much nicer to have it than not to have it. I think it’s got a lot of potential to go yet. It just needs people to use it a bit more” (Ken, Phase Two interview). Tutors were also aware that most of this potential would not be fulfilled until the tutors themselves began to make more use of the whole ALEC Moodle site. “We’re only using that much of Moodle, [indicates small amount] where we could be using that [indicates large amount]. We will grow into it” (Norma, Phase Two interview).

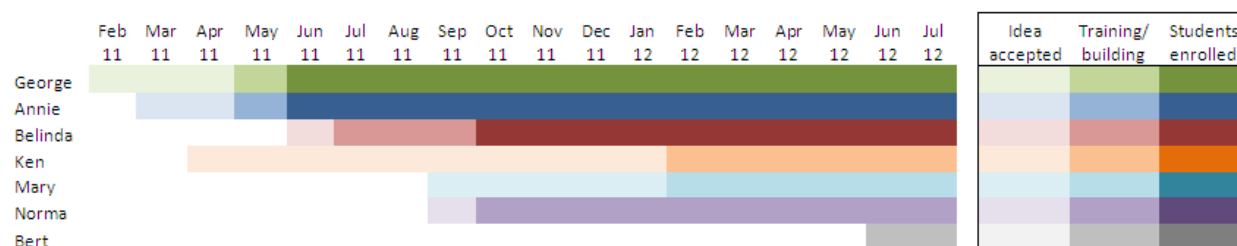
The development and implementation of Tutors Only as detailed in this chapter was appreciated by the ALEC staff. They could engage as a community in both physical and online environments and had become a blended community of practice. As more tutors engaged with the online environment, their professional practice too developed to include an online aspect, and they became a blended community of online practice (BCoOP). The following chapter details the further development of the community's online practice as members were given the opportunity to develop classrooms for their clients within the existing online environment.

## Chapter 5 Phase Two meso-cycle two and Phase Three: Online classroom focus

The previous chapter described the development and use of Tutors Only by all ALEC staff for community wide communication and sharing of community resources online. This chapter describes the extension of the online environment to include development of online classrooms. In Phase Two meso-cycle two of this design-based research, a small group of tutors were given the opportunity to develop online classrooms for their clients. In Phase Three this opportunity was made available to all ALEC tutors, and the intervention was evaluated in terms of its local impact. The chapter is divided into three sections. The preparation of the online environment to further support tutors in their use of e-learning through its inclusion into their teaching programmes is outlined in section 5.1. This first section focusses on the developer's activities in designing and implementing these new elements. The tutors' online classroom developments and associated professional development are detailed in sections 5.2 and 5.3. The second section focusses on the experiences of the three tutors who initially developed online classrooms and went on to facilitate e-learning for their learners through these classrooms. This is followed in section 5.3 by the experiences of other tutors who were involved in developing online classrooms.

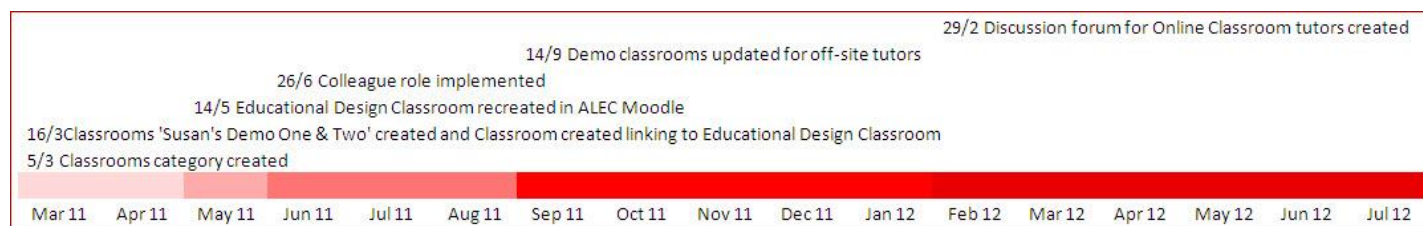
### 5.1 Preparation: Enabling and supporting tutors in developing their online classrooms

Preparation for Phase Three of the research required the further development of the online environment and the selection of a small number of tutors to approach with the initial opportunity of developing an online classroom. The developer had gauged the tutors' interest in the online environment while conducting interviews and observing the activities of the tutors in Tutors Only. The selection of tutors to approach with the opportunity of developing an online classroom was made following a discussion with the manager. Together they decided that two people, one At-Base tutor, George, and one Community and Workplace tutor, Ken, were initially to be approached with the idea of starting an online classroom in February and April 2011 respectively. By the end of Phase Three of the research, seven of the fourteen ALEC tutors who had internet access in their teaching spaces had taken up the opportunity to create an online classroom. The At-Base tutors were Annie (lead tutor) George and Belinda, the Community tutors were Ken and Mary, and the Workplace tutors were Norma and Bert. At the end of the data collection period (July 2012), the three At-Base tutors of these seven had developed their online classrooms, enrolled their clients and were using an online classroom for e-learning. A timeline of the tutors' online classroom development provides an overview in Figure 31. Each classroom will be discussed in more detail later in this chapter.



**Figure 31: Timeline of online classroom developments by all tutors participating in Phase Two meso-cycle two and Phase Three, February 2011 to July 2012**

Tutors Only had provided the tutors with an example of what could be created in Moodle and had demonstrated the use of some of the tools available. The developer, using her professional experience as an educational designer, provided three demonstration classrooms, to support the tutors in designing their own online classrooms. These demonstration classrooms were to provide examples and guidelines for the tutors, as well as further opportunities to see an online classroom. The developer also created a new ALEC Moodle role of ‘colleague’, to allow tutors to observe the development of each other’s classrooms. A timeline of the implementation of support for online classroom tutors is shown in Figure 32. This section of the thesis provides a detailed description of this support.



**Figure 32: Timeline of developer’s implementation of support for online classroom tutors, March 2011 to July 2012**

### 5.1.1 Demonstration classrooms

In March 2011, in preparation for discussions with tutors about developing their own online classrooms, the developer created demonstration classrooms for tutors to learn from and to use as exemplars during an introductory discussion. These classrooms were created in “Susan's helpful example classrooms”, a sub-category of the ‘Classrooms’ category. The first classroom added was one which the developer had previously designed as part of her role in another institution and made available to both secondary and tertiary educators. This classroom, called the “Educational Design Classroom”, was created to be an example by its layout and design and, through its content, to provide advice on how to develop an online classroom (see Figure 33). Access to this classroom was initially provided as a link to a publicly available Moodle site in March 2011. When the developer had time, she recreated it in the ALEC Moodle site in May 2011, to enable all supporting resources to be incorporated within the one site.

**Susan's Educational Design Classroom** You are logged in as Susan Tull (Logout)

## Adult Literacy Education Centre

ALEC ► EdDesignClass Switch role to... Turn editing on

### Course Menu

- EdDesignClass
  - Classroom Information
  - Assessment Information
  - Planning and Building your Classroom
  - Presenting Course Material
  - Communicating with Students
  - Student Interactions
  - Managing Groups
  - Student Assessment
  - Thinking Tools and Tasks
  - Other Tools You Can Use
  - General Discussion
  - Handy "How to..." Information
- Show all
- Participants
- Gradebook

### Susan's Educational Design Classroom

Welcome to my Educational Design Classroom

Classrooms can be very individual places - some of us like our desks up the front; some of us like posters on the wall; some of us like our students' desks in groups. What's really important about the classroom is that it's a place where all our students can learn.

- An online classroom is no different in that respect.

So, this is my classroom. I like posters - but not too many. I like my desk up the front so I can see the faces of my students. I know it's important that each and every one of them feels that I am teaching them where they are at.

This classroom is still a work-in-progress so there are elements which have yet to be completed and some that are yet to be started. If there's something you really want to know about - just ask. That's what I'm here for. In this space I'll do my best to provide you with ideas on how to make the best use of the online teaching space Moodle provides, and support you in doing that.

You'll find all the content for this classroom located in the sections accessed through the menu on the left hand side of the page.

Like any classroom things can change, and I'll be adding any interesting new ideas I come across, as well as addressing present needs.

Enjoy!

Susan

p.s. The easiest way to contact me is by email [susan@eddesignclass.org](mailto:susan@eddesignclass.org)

**Figure 33: Susan's Educational Design Classroom, displaying the 'Welcome' page and showing the topic focussed design in the section headings in the 'Course Menu' on the left, May 2011**

While the content of this exemplar classroom provided information, and gave the tutors a comprehensive example of how the tools available in Moodle might be used, the depth of content in the Educational Design Classroom involved too much reading to provide a good example of how to create an online classroom for adult literacy clients. The 'Planning and Building your Classroom' section highlighted in Figure 34 illustrates the depth of content. The developer considered that other more appropriate examples were needed to provide ALEC tutors with an adequate range of possible course designs. This opinion was later verified by tutor comments when they were shown the three example classrooms, and indicated a strong preference for examples with less text on them. The design of the Educational Design Classroom contained general content in the first and last two sections and topic focussed content in the sections in between.



ALEC ▶ EdDesignClass

[Return to my normal role](#)

## EdDesignClass

- EDesignClass**

  - ☐ Classroom Information
  - ☐ Assessment Information
  - ☐ Planning and Building your Classroom
  - ☐ Presenting Course Material
  - ☐ Communicating with Students
  - ☐ Student Interactions
  - ☐ Managing Groups
  - ☐ Student Assessment
  - ☐ Thinking Tools and Tasks
  - ☐ Other Tools You Can Use
  - ☐ General Discussion
  - ☐ Handy "How to..." Information

**Show all**

 Participants

 Gradebook

## Planning and Building your Classroom

Here are some suggested steps for planning and building your classroom.

### Step One



Decide how you will **structure** your teaching of the course material.  
This might be:

- Weekly units of work
- Modules which cover one or more weeks
- Topics which may be taught from at different times within the course

From this planning select appropriate headings which will rename the sections which appear in your left-hand menu block.

The following steps are not sequential, but all of them need to be considered in planning your course and designing your classroom.



### Step Two



It's important to think about what your students are going to **do** in the classroom. Consider how you could use the facilities available in Moodle to help your students **construct** their understandings, to **practice** skills, review or **reflect** on their learning, and to help you to manage student **assessment**. There a number of ways in which students can complete their work individually or collaboratively by:

- helping to create a **wiki**
- posting within a **forum**
- taking a **quiz** (multiple choice, matching, cloze, short answer, numerical, true/false etc)
- writing a **journal**
- uploading an **assignment** which has been completed offline

More information on these is available in the section on "Student Work"

It's also important to think about how and when your students might want or need to **interact** with you or each other and how you could incorporate that interaction into your classroom. 'Learn' has three main ways for students to interact:

- through a **forum** which allows them to add a post which may also contain an attachment such as an image, an sound file, or a document
- through a **wiki** which allows students to contribute themselves and to edit other students work to create a collaborative piece of work
- through a **chat** which is a space in which students can communicate in 'real time'

More information on these is available in the sections on "Communicating with Students" and "Student Interactions"

### Step Three



Choose one section to **develop**. You will be able to use this as a model for other sections as you develop them.

The first part to create, is **what will go on the section page itself**.

This shouldn't be detailed information unless your section is a very small one. It's more an introduction and a lesson outline with instructions. It's a good place to add some of your personality to your classroom in the way that you "talk" to the students.

You could begin by setting this out in a Word document (or on paper). Think of this as more of a classroom handout than as a page of notes. As you do this, keep in mind your student sitting alone at their computer with just this page to guide them. Think about how you will "talk" the student through the work ahead, how you will set your page out, where you might add graphics to clarify or add emphasis, where you might need to link to some more detailed information or readings.

### Step Four



These are the decisions about where the more **detailed information** of your course will go.

What other information will students need to complete this module of work?

-Are there readings they need to have or notes you have for them?


These can be presented as Word documents, text pages, or webpages you write.

- Is there a powerpoint presentation they need to see, a sound clip to listen to or a video they need to watch?

Links to all these resources can be placed on section page at the point in the instructions where the students will need to access them.

### Examples of Course Sections

Below are three annotated examples of site sections which have been created for different levels of online content. (These are pictures with annotations, not actual sites, so they are not interactive.)

-  Minimal online content - to support a strongly face to face course
-  Medium online content - a blended course site incorporating active online elements
-  Maximum online content - a site for a fully online course file



**Recommended reading:**

-  Critical Elements of Online Learning Settings (article extract)

A really helpful poster which gives an overview of Moodle tools and how you could use them to achieve your pedagogical goals. (It's quite a big file, so expect it to take a while to open.)

 [A Moodle Tool Guide for Teachers](#)

Figure 34: Susan's Educational Design Classroom, displaying the 'Planning and Building your Classroom' section, May 2011. Other section headings can be seen in the Course Menu on the left

Drawing on her own professional experience as an educational designer, the developer created two online classrooms for the ALEC tutors' adult literacy teaching context. They presented two alternative designs to provide the tutors with examples showing a variety of possibilities. The developer reflected in her design narrative,

I have designed the two demo classrooms quite differently to show the variety available. One is subject based and looks quite plain (mostly white with a picture heading theme), the other is student based and very blue, with clouds. I have developed class activities and students within the subject based site so that the tutors can see what it could look like with a class working in there. (Design narrative, 12/3/11)

The 'Susan's Demo One' classroom was designed with a focus on the content areas taught, such as Literacy, Numeracy and Employment skills. It also contained sections for self-organisation and extension work. The headings of these sections can be seen on the left side of Figure 35.



**Figure 35: Susan's Demo One – displaying the 'Welcome' page and showing a subject focussed design in the section headings in the Course Menu on the left side, March 2011**

Each of the sections contained a variety of resources including links to websites with activities to be completed, and links to files for student use. An example of this can be seen in Figure 36 which highlights the Numeracy section of this classroom. Examples of using multi-media resources were also provided in the 'Employment Skills' section which included videos embedded within the page.

In casual conversation at a PD day, two tutors had expressed an interest in improving students' self-management skills. Consequently the developer provided examples of a way this might be implemented in both of the demonstration classrooms. A 'Progress Bar' was added in a block in 'Susan's Demo One' to demonstrate one of the ways students could track their own progress

through activities which were provided on the site. A timesheet for students was created in both Demo classrooms using a database tool enabling students to log their classroom activities.

**Susan's Demo One**

You are logged in as [Susan Tull: Student](#) ([Return to my normal role](#))

## Adult Literacy Education Centre

ALEC OSD01 [Return to my normal role](#)

**Course Menu**

- [OSD01](#)
  - [Getting Organised](#)
  - [Literacy-Reading with Purpose](#)
  - [Numeracy](#)
  - [Employment Skills](#)
  - [Extra for Experts](#)
- [Show all](#)
- [Participants](#)
- [Gradebook](#)

**Fractions Progress Bar**

[Changing decimals to percentages](#)

Resource viewed ☒ Expected: Sun 3 Apr, 10:55 PM

### Numeracy

#### Working with whole numbers

- [Basic facts and calculations - Bingo](#)
- [More difficult calculations - Bingo](#)

#### Working with fractions

- [A visual way to learn about fractions](#)

There is a lot of information about fractions on the site below. You could:

- revise what you know by reading through the information.
- practice your skills by working through some of the exercises which are right at the bottom of the page.

- [Fractions - add, subtract, multiply and divide them](#)

#### Changing forms

On these websites you can:

- Revise your knowledge (in the green section)
- Practice your skills (in the blue section)
- Make a game of it! (in the yellow section)

- [Changing fractions to percentages](#)
- [Changing decimals to percentages](#)
- [Changing fractions to decimals](#)

Figure 36: Susan's Demo One, displaying section 'Numeracy', showing the progress bar under the Course Menu on the left, March 2011

'Susan's Demo Two' classroom was designed with a focus on individual students which allowed more individual programmes to be put in place (see Figure 37). Each section contained resources for a range of subjects and provided an opportunity to personalise the students' learning (see Figure 38). This was the design that four out of six tutors saw as being most suitable for their students. "I reckon my learners would love this actually. They'd like the personalised aspect of it ...They love having personalised stuff." (Ken, Meeting 6/4/11)



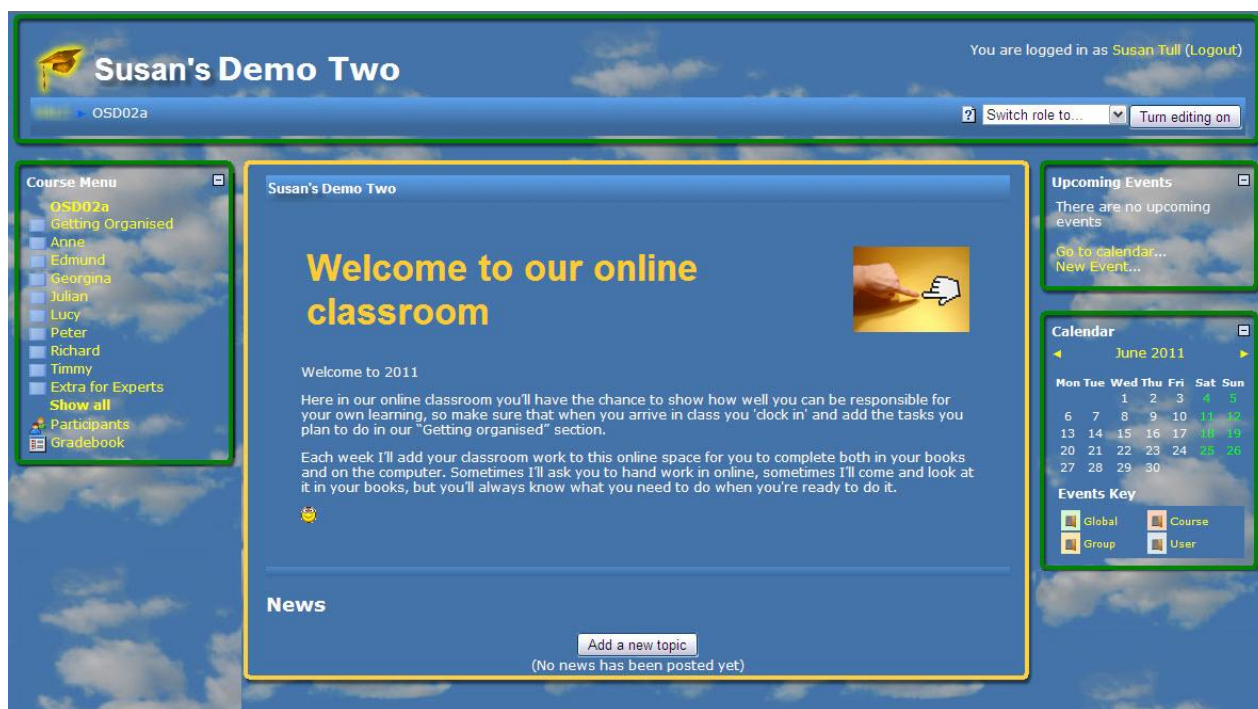


Figure 37: Susan's Demo Two, displaying the 'Welcome' page and showing the student focussed design in the section headings in the Course Menu on the left, March 2011

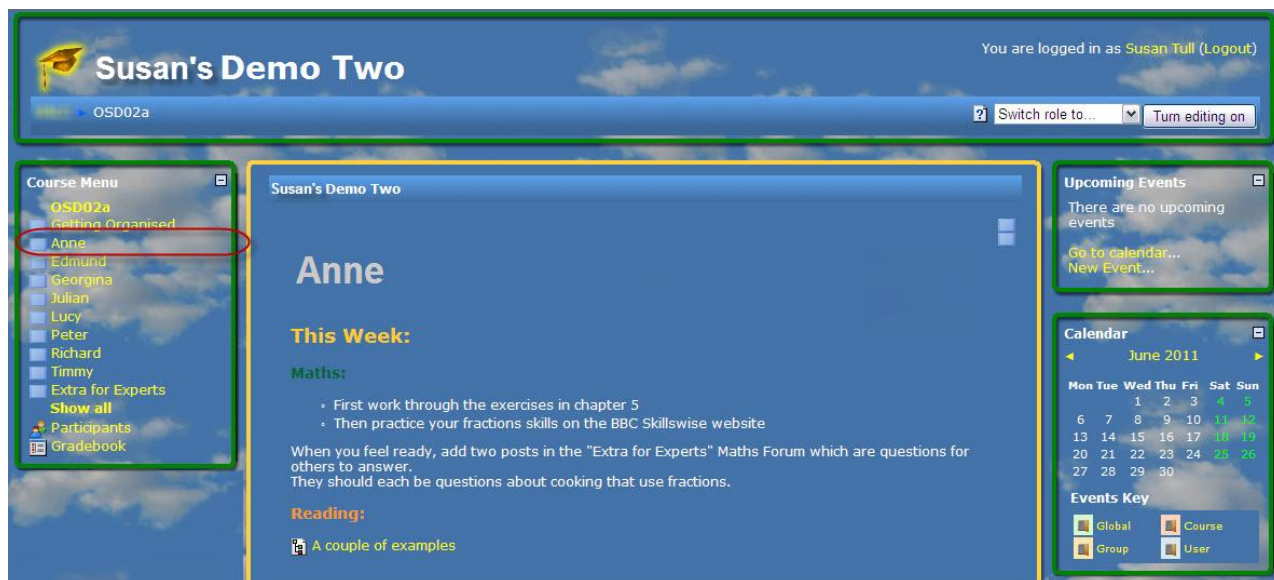


Figure 38: Susan's Demo Two, displaying section 'Anne' showing some of the activities for a single student, March 2011

All three tutors who developed online classrooms in 2011 did so following a format very similar to that of the 'Susan's Demo Two' classroom. These tutors developed online classrooms then provided an example of that format to the other tutors. To increase the range of examples, the developer redesigned 'Susan's Demo Two', in September 2011, with a focus on group work (see Figure 39). Tutors were provided with examples of four types of design: topic based, subject based, individual client focussed, and group focussed. The developer intended this to be helpful for the off-site tutors

who were at that time considering designs for their own classrooms, and for the At-Base tutors who were considering improvements to their online classrooms, such as “grouping students together and being able to give resources to a group of students rather than doing it student-by-student” (George, Phase Two interview 2).

The screenshot displays a Moodle course interface for 'Susan's Demo Two'. At the top, a navigation bar shows the user is logged in as 'Susan Tull: Student' with a link to 'Return to my normal role'. Below this, a 'Course Menu' on the left lists various course elements, with 'Group A work' circled in red. The main content area, titled 'Group A work', is divided into two sections: 'Maths' and 'Reading'. The 'Maths' section discusses fractions and includes a link to 'BBC skillswise - Fractions'. The 'Reading' section discusses text analysis and includes links to 'Text Analysis sheet', 'Certificate', 'Form', and 'Poster'. On the right side, there are two widgets: 'Upcoming Events' (showing no events) and a 'Calendar' for May 2012.

**Figure 39: Susan’s Demo Two, displaying section ‘Group A work’ showing some of the activities for a group of students, and showing the group focussed design in the section headings in the Course Menu on the left, September 2011**

The Moodle site logs indicated the extent to which the tutors chose to view the demonstration classrooms. Viewed clockwise, Figure 40 shows the number hits on all the demonstration classrooms during each week by each of the tutors who had their own classrooms and by the manager, in the weeks from June 2011 to July 2012. The graph shows that tutors did not access these classrooms often. Access usually took place when tutors were initially planning and designing their own online classrooms, and occasionally when they considered redesigning them. For example, George only briefly visited the demonstration classrooms (1 and 2 hits) in June 2011 as he was setting up his own classroom. Annie accessed these classrooms much more (7 and 10 hits) in June 2011 and revisited them briefly (1 to 4 hits) as she made changes to her own classroom in September and December of 2011 and again in May 2012.

By providing the tutors with open access to these demonstration classrooms, the developer was allowing the tutors to participate peripherally in her own online practice, and providing them with informal professional development within the context of their workplace. The next step was to

enable them to share in each other's online practice, as they developed their online classrooms and taught within them.

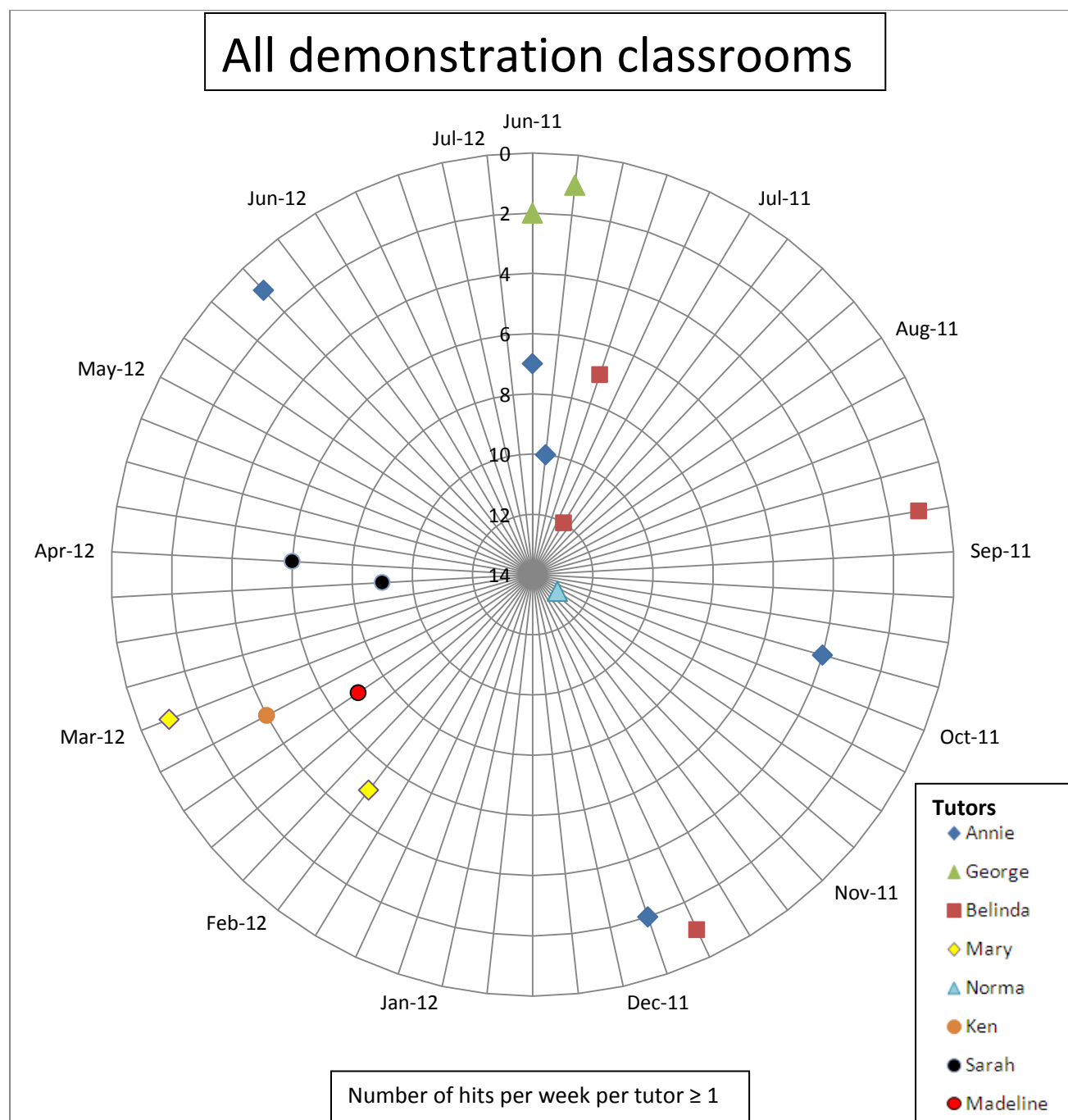


Figure 40: Tutor hits on all demonstration classrooms from June 2011 - July 2012 for all staff with online classroom access, showing the number of hits per week per staff member. (The more central the marker, the greater the number of hits by that person in that week)

### 5.1.2 Colleague role

As the tutors developed their online classrooms the developer encouraged a culture of shared online practice, by making it possible for any tutor who had an online classroom to see inside all the other tutors' classrooms. To enable this to take place, the developer created a new 'role' in Moodle, titled 'Colleague'. The Colleague role allowed a user to observe a Moodle classroom but not to participate in any activities or to make any changes to the classroom. A Colleague could view all the content of the course even if it was hidden, so that they could learn from what the teacher in the course had chosen to do. The developer described this custom built role as one which,

will allow the tutors to have legitimate peripherality in all of each other's courses without worrying about getting each other's forum emails - all the advantages of being able to watch and learn, without the disadvantages of a clogged up mailbox, or feeling embarrassed about your messages to students being sent out to other staff! (Design narrative, 23/6/11)

The developer hoped that the Colleague role would support informal learning online within this community of practice by allowing the tutors to learn from each other through legitimate peripheral observation.

Colleagues were added in a way which enabled them to observe the teachers' development of their online classroom, but hid their presence to prevent anxiety amongst students. This meant that while other tutors could see who was looking at the classroom, the students could not. The contractual ethics statement, signed by all tutors on employment, ensured that all student work was kept confidential.

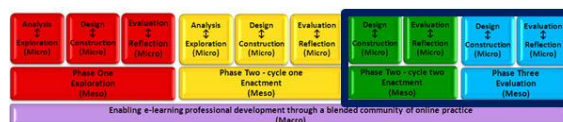
The description of the Colleague role created and displayed to all members within the ALEC Moodle site reads:

The Colleague role is similar to a guest in that they may view but not participate. This role allows a colleague to view all the content of the course even if it is hidden, so that they can learn from what the teacher in the course has chosen to do. (Colleagues should be added as a hidden assignment). They are able to see reports, gradebook, hidden content, and to view activities such as chat recordings, choice, quiz, feedback, assignments, databases, scorms and surveys for all groups. By default this role does not receive any emails from the course forums. (ALEC Moodle site, Define roles, June 2011)

## 5.2 Phase Two meso-cycle two and Phase Three:

### Online classroom developments for the At-Base tutors

Of the three teams of tutors, those who worked At-Base had the most opportunity to interact face to face. They all taught in permanent classrooms of their own, in rooms adjacent to each other, and saw each other during breaks in each teaching day. These tutors worked the same hours and had holidays at the same time. The team held regular meetings, usually once a week, where they



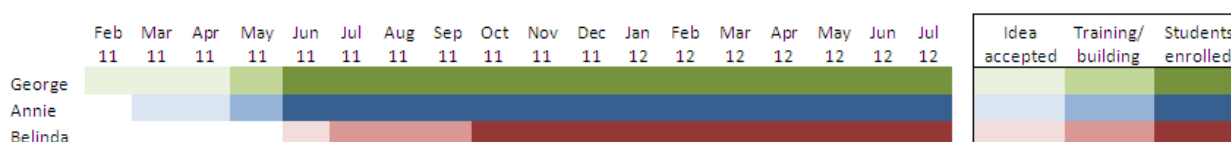


discussed both their teaching and their programme. Annie was the lead tutor for this team, as well as the tutor in the organisation with responsibility for the resourcing and tracking of national standards assessments. This was the smallest and most cohesive team of ALEC tutors. When the opportunity to develop online classrooms was made available all three At-Base tutors adopted the use of an online classroom within their teaching programme. This section of the thesis looks in detail at the development of their online practice as they incorporated e-learning for their students through the adoption of online classrooms.

George, the At-Base tutor who seemed most enthusiastic about the use of the online environment, was approached with the idea of having his own online classroom in February 2011. He responded positively and saw the online classroom as a good opportunity for his students, as the developer recorded in her design narrative “[George’s students] are all working on individual programmes, we agreed that it [an online classroom] could work in really well with his goal of teaching them self-management” (Design narrative, 2/2/11). In the following week George discussed the opportunity he had been given with the other At-Base tutors who also expressed an interest. The opportunity to create an online classroom in Moodle during this phase of the research was then extended to Annie and Belinda, as well as George.

Three meetings with the developer were held to support Annie, George and Belinda in developing their online classrooms. The first meeting, held in March 2011, was a demonstration of what was possible within a Moodle classroom. At this meeting the tutors were introduced to the developer’s demonstration online classrooms. Belinda was unable to attend the initial meeting, but the developer records that Annie and George “really appreciated being able to see what is possible – they thought I was just going to tell them” (Design narrative 23/3/11). All three At-Base tutors were enrolled in these classrooms as students, which enabled them to return to the demonstration classrooms at any time to access the examples and information available to support them in developing their own classrooms. At a second meeting in April the developer shared her expertise in online classroom design as Annie and George planned and designed their classrooms. A third meeting in late May focussed on sharing her online practice and answering questions on the use of the tools to create their planned classroom, which were available in Moodle. The developer’s meetings with Belinda followed the same pattern, but were held in June, July and August 2011.

The development of an online classroom for each of the three At-Base tutors, and their clients whom they call students, is described in the following sections. This begins with Annie, the lead tutor of this area and first tutor to have her students using the online classroom, followed by George whose classroom became active shortly afterwards, and Belinda who began her classroom development four months later (see Figure 41).



**Figure 41: Timeline of online classroom developments by At-Base tutors participating in Phase Two meso-cycle two and Phase Three, February 2011 to July 2012**

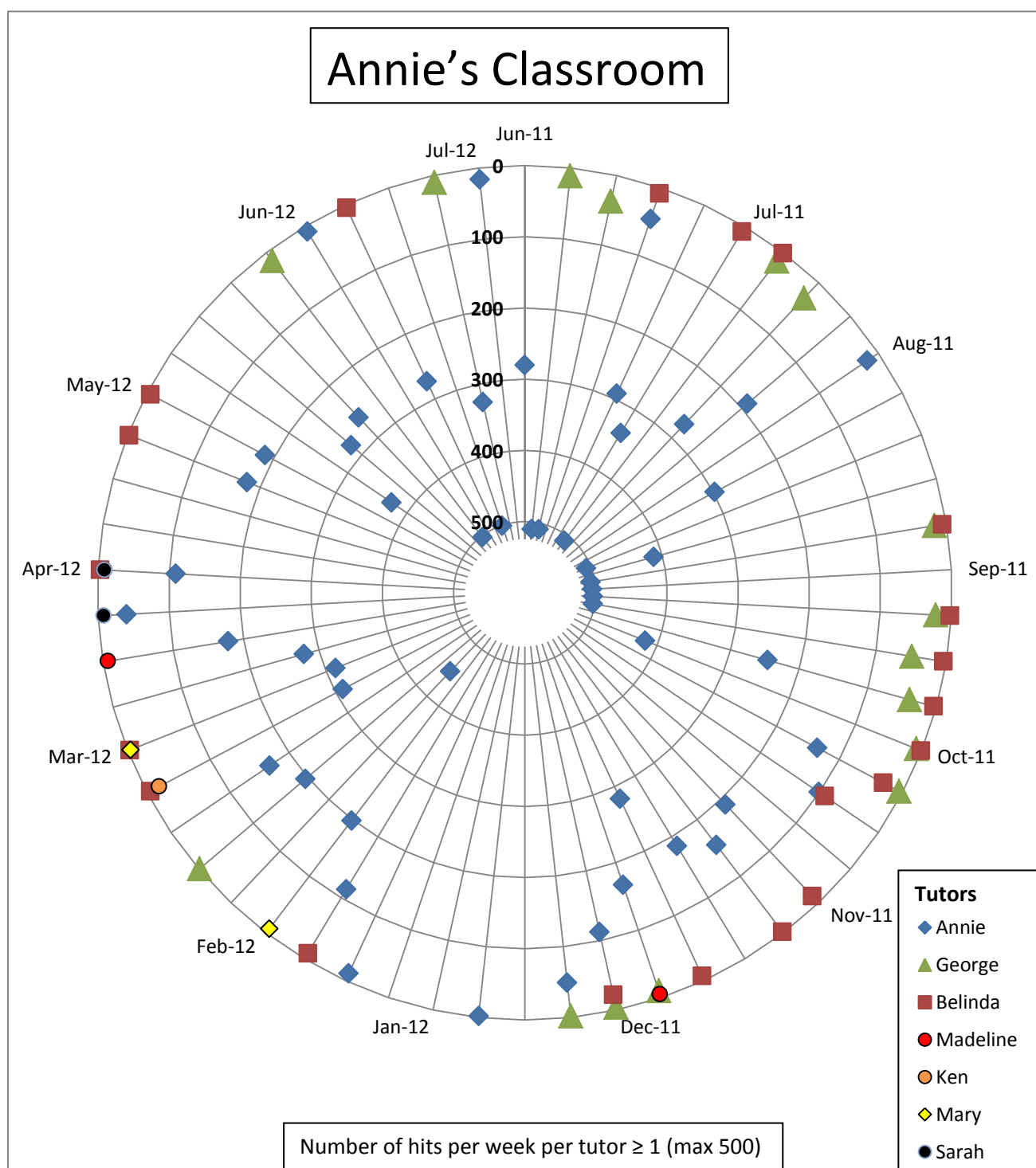
### 5.2.1 “Annie’s Classroom”

Annie, the lead tutor, had gained some understanding of the way Moodle functioned while adding national assessment standards in Tutors Only, Resources. This experience, and having access to the Lead Tutors’ space to practice in, helped her in starting her online classroom. “The fact that I knew a little bit about it already, had used it, meant that I could go into it feeling reasonably confident that I knew sort of what I was doing, and I think that has helped a lot” (Annie, Phase Two interview 2). During May 2011 Annie developed her online classroom, named “Annie’s Classroom”. As well as using her own prior experience Annie took advantage of the support the developer had made available in the Moodle site. She accessed the support documentation in the ‘How to’ Area of Tutors Only on eight occasions before she began building her online classroom, and 12 occasions afterwards, to view documentation on how to use a forum and how to use the tools to build a section. Annie also made use of the demonstration classrooms on two occasions before students were enrolled in her online classroom, and three more within the first month of students being enrolled. The design of Annie’s Classroom was modelled on the design of the client focussed demonstration classroom. Annie explained in her final comments to the researcher,

The Moodle site has been of enormous value for me in developing e-learning for my students... I used the demo classrooms etc. initially - and I am sure I will use them again in the future. In fact I should have another look again soon as I am stuck in a rut at the moment and need some new input to increase my motivation. (Annie, Final Survey)

Annie maintained her classroom with no direct support from the developer, other than to have new students enrolled. She returned to the demonstration classrooms in September and November and again in May of 2012 as she continued to develop her classroom, and explained that her later use of the support documents was as a last resort, “If I wanted to do something and I really couldn’t remember, I’d look it up...I did at the beginning look up the things [help documentation] you’d done... Since then I bash away and work it out” (Annie, Phase Three interview). Annie continued to develop her classroom independently through a focus on her students’ needs. “The main thing that’s helped me to develop it really is ‘How do I meet the needs of the student?’ that’s sort of been it” (Annie, Phase Two interview 2).

As George and Belinda developed their classrooms Annie’s classroom served as another, more relevant, demonstration classroom for them. They regularly made use of the ability their Colleague role gave them, to view her classroom online, with George viewing it in 16 out of 44 teaching weeks and Belinda viewing it in 21 out of 44 teaching weeks. Tutors from the other teams who had been given the role of Colleague also appreciated being able to see her classroom. The site logs indicated the extent to which other tutors chose to look at what Annie was creating in her classroom. Viewed clockwise, Figure 42 shows the number hits on Annie’s Classroom each week by Annie and her colleagues. Annie was active in her online classroom in 52 of the 58 weeks from June 2011 and July 2012. The maximum number displayed in the graph has been capped at 500 hits, because of her very high number of hits (up to 2232 hits per week) in the nine weeks when she concentrated on developing her classroom.



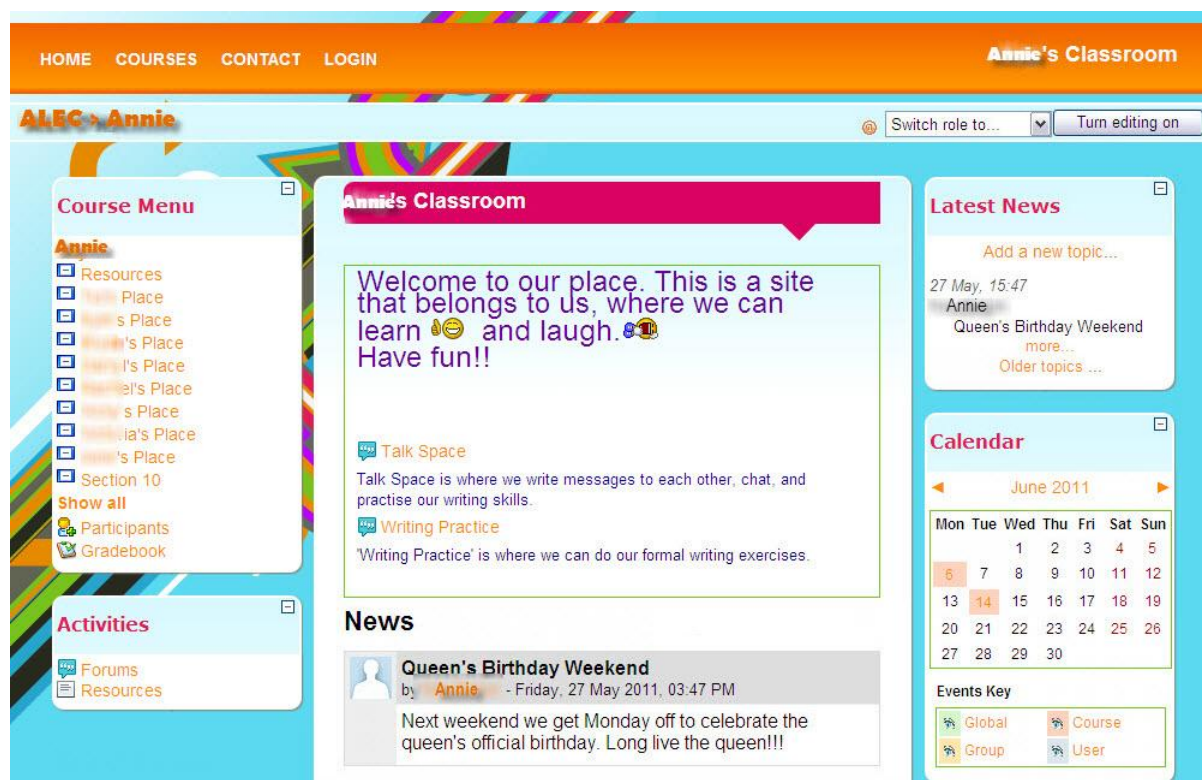
**Figure 42: Tutor hits on Annie's Classroom June 2011 - July 2012 by all staff with online classroom access, showing the number of hits per week per staff member to a maximum of 500 hits. (The more central the marker, the greater the number of hits by that person in that week)**



Annie did not feel she needed to view other tutors' classrooms for support or inspiration. She explained, "I haven't really been influenced by anyone. I don't really look for ideas. I look at what I want to do in there [Annie's Classroom] and how I would like things, and try things." (Annie, Phase Three interview).

When Annie began to develop her online classroom in May 2011, her students worked in a single physical classroom containing grouped tables, with a total of eight computers situated against the classroom walls. The students worked on individual programmes designed to meet their learning needs, and the online classroom came to play a significant part in that programme. Annie's students first accessed her online classroom on 1st of June 2011.

The decoration or 'theme' that Annie initially chose for her classroom, and the contents of her Welcome page (see Figure 43), reflected her love of bright colours and the enjoyment she hoped the online classroom would provide for her students. On the left of Annie's Classroom the course menu contained links to a section of the classroom for each of her students. The activities block on the left provided alternative links to all the resources and activities in the site. On the right was a block which displayed the titles of recent posts in the News forum, with links to them. The calendar on the right of the classroom was used to remind students of upcoming events, such as tests or holidays.



**Figure 43: Annie's Classroom, displaying the Welcome page, showing the sections for each student in the course menu on the left, the calendar on the right and the news post and forums in the centre (June 2011). (Students' names have been blurred to provide anonymity)**

The centre of the Welcome page displayed an inviting message from Annie and two forums which allowed students to interact with each other online. The "Talk Space" forum provided the opportunity for students to communicate informally with each other in writing, and the "Writing

Practice” forum allowed students to practice their formal writing in a shared space. At the bottom of the Welcome page the newest item from the News forum was displayed. Annie posted messages in this forum for her students to read when they logged in to the site. The thirty one messages she posted during this study often reflected current events in her classroom and the city (see Figure 44 and Figure 45). These news posts were not emailed to students, but were visible to students whenever and wherever they logged in. Sometimes posts were used to give students information if Annie was absent from the physical classroom (see Figure 46).



Figure 44: Annie's Classroom news post congratulating her students on their good scores in a game, 2/6/11

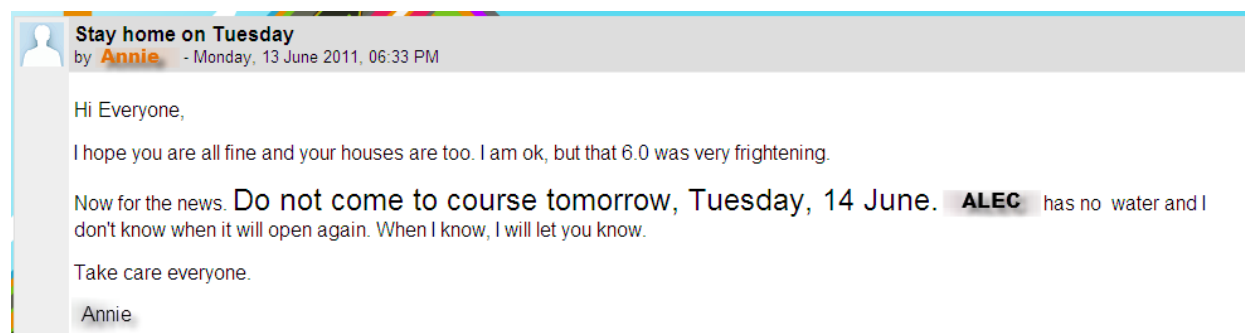
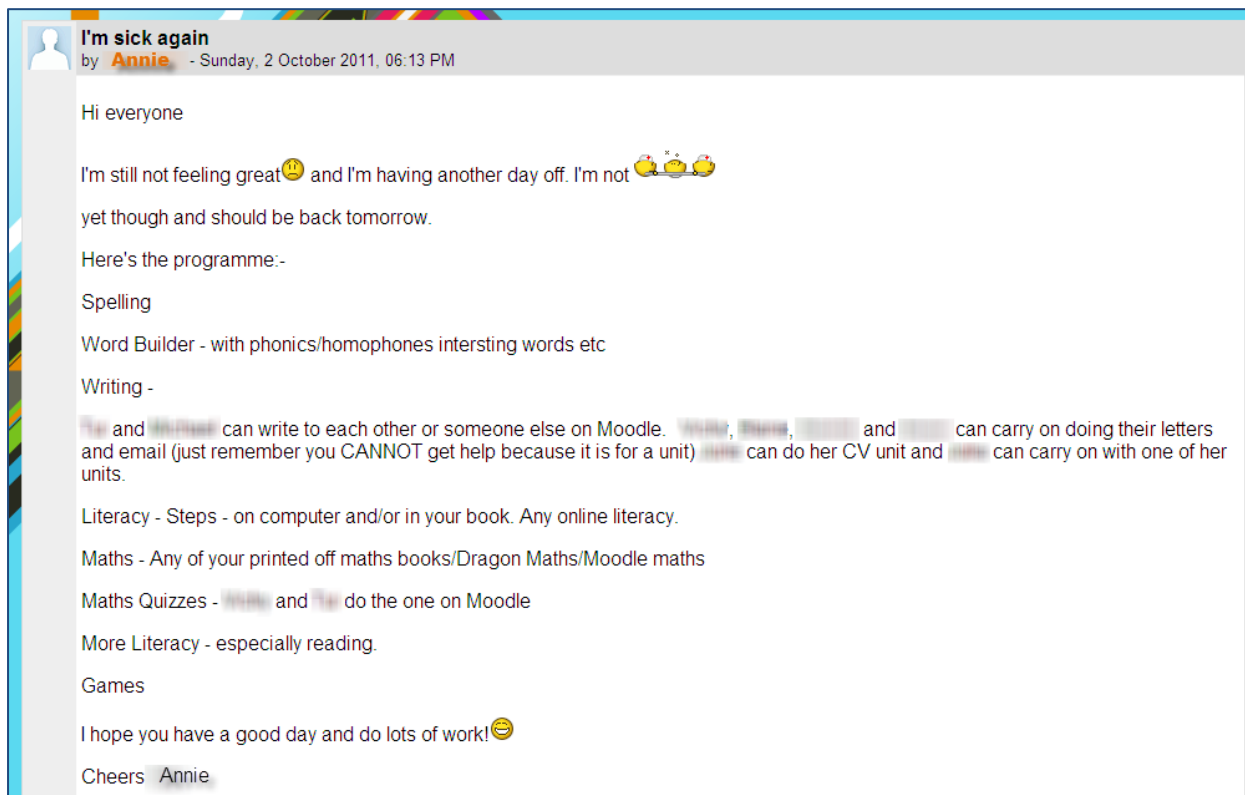


Figure 45: Annie's Classroom news post providing information about ALEC's situation following the third major earthquake, 13/6/11



**Figure 46: Annie's Classroom news post giving the students their programme of work to be completed while she was absent due to ill health, 2/10/11. (Students' names have been blurred to provide anonymity)**

As the classroom developed, Annie added a third student forum on the Welcome page. This "Good Sites and Reviews" forum gave students the ability to suggest e-learning resources. Annie's supporting text explained, "Good Sites and Reviews is where you can tell me about good games, videos and websites and also where you can tell me what you think of the games, resources and sites I have found" (Annie's Classroom, 8/6/11). Changes were observed throughout these phases of the research which showed Annie increasing the involvement of the students in the development of the classroom itself, such as publishing acknowledgement in the classroom of student recommended resources and changes, including a change in theme for the winter (see Figure 47).

**Annie's Classroom** You are logged in as Susan Tull (Logout)

ALEC > Annie ? Switch role to... Turn editing on

**Course Menu**

Annie

- ☐ Resources
- ☐ Place
- ☐ Place
- ☐ Annie's Place
- ☐ Annie's Place
- ☐ Annie's Place
- ☐ Annie's Place
- ☐ Annie's Place
- ☐ Trial Student 1
- ☐ Annie's Place

Show all

- Participants
- Gradebook

**Activities**

- Books
- Forums
- Resources

**Annie's Classroom**

## Welcome to Annie's Room

**Talk Space**

Talk Space is where we write messages to each other, chat, and practise our writing skills.

**Writing Practice**

'Writing Practice' is where we can do our formal writing exercises.

**Good Sites and Reviews**

Good Sites and Reviews is where you can tell me about good games, videos and websites and also where you can tell me what you think of the games, resources and sites I have found.

**Latest News**

Add a new topic...

15 Jun, 11:53  
Annie  
Theme Change more...  
Older topics ...

**Calendar**

July 2012

Mon	Tue	Wed	Thu	Fri	Sat	Sun
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

**Events Key**

- Global
- Course
- Group
- User

**Upcoming Events**

There are no upcoming events

Go to calendar...  
New Event...

**News**

**Theme Change**  
by Annie - Friday, 15 June 2012, 11:53 AM

... and Annie have decided to have a wood theme for winter because it makes us feel warm and cosy.

We hope everyone likes it.




Figure 47: Annie's Welcome page displaying the new winter theme and showing the "Good Sites and Reviews" forum added in the centre, July 2012. (Students' names have been blurred to provide anonymity)

Annie's classroom design contained a section dedicated to some general resources which were appropriate for all students (see Figure 48). This Resource section gradually developed throughout the year as a greater number and wider variety of resources were made available to the students (see comparison of Figure 48 and Figure 49).



# Resources

## Maths

- BBC Skillswise
- BBC Skillswise EL3
- Oswego Maths
- Academic Skill Builders

Academic Skill Builders has lots of good maths games to choose from. If you don't know what to do ask someone to help you.

- Fraction Video 1

---

## Improve your Vocabulary

### Dictionaries

- Oxford Dictionary
- Vocabulary Dictionary

The Vocabulary dictionary tells you what a word means, uses the word in a sentence and you can listen to how the word is pronounced.

### Pronunciation Dictionary

The Pronunciation Dictionary lets you listen to a word so that you will know how to say it.

### Games

- Bookworm - recommended by Bryan
- Free Rice
- Vocabulary Games
- Word Building - use prefixes and suffixes to make new words
- Animal, Vegetable or Mineral? See if you can beat the clock.

---

## Grammar and Punctuation Skills

- Grammar and punctuation games

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## Reading Skills

- Syllable Video
- Syllable Video 2
- Tiger Woods

Figure 48: Annie's Classroom Resources section displaying the resources for all students, June 2011

# Resources



## New Give Way Rules

- You Drive!
- New Give Way Rules
- Give Way Quiz
- Give Way Video

---

## Maths

- That Quiz - add, subtract, multiply and divide
- That Quiz - Fractions
- That Quiz Time
- BBC Skillswise - Maths
- Oswego Maths
- Place Value Game
- Coolmath Games

---

## Measurement

- Test Your Maths Knowledge
- Measure in Centimetres
- Area and Perimeter Game
- Find the Area - Peel!
- How to work out area - and test yourself!

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## Maths Quiz Answers

- Book 1 Answers
- Book 2 Answers
- Book 3 Answers

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## Magic Maths (Word Problems) Book 2 - ANSWERS

- Book 2 Answers

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## Games

- Lorrie - put Lorrie back together again
- Just for Fun
- Great Word Problem Games
- Edupop Games
- Animapedia

---

## Angles

- What's My Angle?
- Animapedia

---

## Maths Videos

- How Can I Learn My Times Tables?

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## Telling the Time

- Hours Chart - print the page
- Hours worksheet 1
- Hours worksheet 2
- Hours worksheet 3

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## Literacy

### Improve your Vocabulary

- Free Rice
- That Quiz - Vocabulary
- Wordle
- Vocabulary.com

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### Dictionaries

- Oxford Dictionary
- Macmillan English
- Trangian English Dictionary
- Samsan English Dictionary
- Vocabulary.com

The Vocabulary dictionary tells you what a word means, uses the word in a sentence and you can listen to how the word is pronounced.

### Pronunciation Dictionary

The Pronunciation Dictionary lets you listen to a word so that you will know how to say it.

---

### Alphabetical Order

- What Letter Comes Next?

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### Games

- Wordle's Word Game
- Bookworm - recommended by Bryan
- Letter Blocks - Coolmath
- Vocabulary Games
- Academic Skill Builders
- Jungle Words

---

### Grammar and Punctuation Skills

- Recognising verbs
- Punctuation - helps caps and bcc
- Making Sentences - bbc
- Sentence Construction - bbc e3
- Subject worksheet 1
- Subject and Predicate Quiz - oswego

---

### Reading and Spelling Skills

- Syllable Video
- Syllable Video 2
- Syllable Factsheet bbc
- Syllable Quizzes bbc
- Syllable Game bbc

---

### How to Learn Spelling

- 103 method - with pictures
- 103 method - formal

---

### Spelling Lists

- First 100 Basic NZ Words
- C and O Lists
- Most Commonly Misspelled Words
- Frequently Misspelled Words A
- Frequently Misspelled Words B
- 150 More Often Misspelled Words

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### Homonyms

- Think, their, they're
- BBC Homonym Quiz
- BBC Homonym Game
- Homonym Memory Game
- Homonym Super Match
- Words Confusion
- Homophone Games

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### Writing

- Comic Master
- Draw and write your own comic - Chogger
- Another great comic sheet - MAKEBELIEFS.COM

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### Units

- Produce a CV (US 554)
- CV workbook
- Sample CV
- CV template

Do not print the CV template. See Kay and she will show you how to save it on Word.

Figure 49: Annie's Classroom Resources section displaying the resources for all students, July 2012

The design of Annie's classroom, modelled on a demonstration classroom, had an individual section for each student with the title of "*Studentname's Place*". This design choice allowed Annie to provide individual programmes online tailored to each student's needs, and to give them a sense of ownership of the section's contents. Her enjoyment of bright colours was also apparent in the way that she personalized each student's section using both colours and graphics (see Figure 50). When a student clicked on their named 'Place' in the course menu they were able to view their own section in the centre of the screen with the course menu, activities block, latest news and calendar still visible around it.

The screenshot displays the 'Annie's Classroom' web application. At the top is an orange navigation bar with links: HOME, COURSES, CONTACT, LOGIN, and the site name 'Annie's Classroom'. Below this is a light blue header area with 'ALEC > Annie' on the left and a 'Switch role to...' dropdown and 'Turn editing on' button on the right. The main content area is divided into several sections:

- Course Menu (Left):** A vertical list of links. 'Peta's Place' is highlighted with a red circle. Other links include 'Annie', 'Resources', 'Place', 's Place', 's Place', 's Place', 's Place', 's Place', 's Place', 's Place', 'Section 10', 'Show all', 'Participants', and 'Gradebook'.
- Activities (Left):** A section with links for 'Forums' and 'Resources'.
- Annie's Classroom (Center):** A pink header for the student's section. Below it is 'Peta's Place' with a bird image. It includes 'Steps: Course and book – Step A', 'Word Lists: Self Teach –Level 1', and 'Numbers: Start at 1'.
- Maths (Center):** A section with links for 'Subtraction Quiz 1', 'Add to Ten - Math Lines', 'Chopped-Up Hundreds Charts 2', and 'Addition Games on Academic Skill Builders'. It also contains a paragraph about finding addition games.
- Literacy (Center):** A section with a 'Phonics' sub-header and links for 'ABC Order Game: Short vowel 'a'', 'Short 'A' Vowels Word Match', 'ABC Order Game: Short vowel 'e'', and 'Short 'E' Vowels Word Match'.
- Latest News (Right):** A section titled 'Add a new topic...' showing recent posts from 'Annie' with dates and times, and links to 'Friday!', 'Word Builder', and 'Queen's Birthday Weekend'.
- Calendar (Right):** A section for 'June 2011' showing a calendar grid with dates 1 through 30.
- Events Key (Right):** A section with a key for 'Global', 'Course', 'Group', and 'User'.
- Upcoming Events (Right):** A section showing 'Queen's Birthday Weekend' as 'Today' and 'Library Books Due Back' on 'Tuesday, 14 June'.

Figure 50: Peta's Place – An example student section in Annie's Classroom displaying resources and activities for a single student, June 2011. (Peta is a pseudonym provided for a student)

Students used their sections of the online classroom during teaching time to access resources that Annie had made available to them. Tasks were completed online most often through links to websites with activities which enabled them to practice their skills. Students were able to access Annie's Classroom when they were unable to come to class, or to complete extra work outside class time and a small number of students did so. As the students' use of the site increased Annie began to vary their work by adding new resources on to their individual sections and hiding some of the resources she had given them originally. By the end of the first year of use, each student's section contained a comprehensive programme of e-learning resources which formed the basis of a flexible individual learning programme (see Figure 51).

The online classroom became an integral part of Annie's teaching programme. She explained, "I use it for all of them [her students], and it's part of the program now, and it is good." (Annie, Phase Three interview). After using the online classroom for two months Annie decided to use it to focus her students' activities. "It's going to be sort of the centre point now... They'll go on there [Annie's Classroom], they will work out what they are doing, and it [the day's programme] will all come from that" (Annie, Phase Two interview 2). At the top of each student's section Annie had added a weekly checklist and their current learning plan which included their goals. The checklist contained activities which the students were expected to complete each week. This included work from books and handouts, lessons on cd, games, quizzes, practice activities on websites, and written communication in the online classroom. Annie worked with her students either in groups or individually, and students continued to work independently through their weekly checklist activities whenever they were not working directly with her. Instructions for what students needed to do next were on their section in the online classroom.

ALEC accepted new student enrolments throughout the year. Students who were considering enrolment often attended classes on a trial basis. At Annie's request four student logins were created for these trial students; student1, student2, student3 and student4. Annie then created a 'Trial student' section within her course for these students. This was to ensure that prospective students could participate in the online classroom as part of their trial experience in Annie's class.



The screenshot displays the 'Annie's Classroom' web application. The interface is split into two main panels: a teacher's view on the left and a student's view on the right. The top navigation bar includes the user's name 'Annie', a 'Switch role to' dropdown, and a 'You are logged in as Su' indicator.

**Teacher's View (Left Panel):**

- Course Menu:** A sidebar with a tree view showing 'Resources', 'Peta's Place', and 'Peta's Place' (highlighted with a red circle). Below it are 'Activities' (Books, Forums, Resources) and 'Participants' (Gradebook).
- Main Content Area:** Displays a grid of resources for 'Peta's Place'. Each resource has a title, a description, and a list of activities. The resources include:
  - Plans:** Peta's Learning Plan, Weekly Checklist.
  - Literacy:** Steps to Literacy (Steps Book: First Steps C, Steps Computer: on PC 3 and laptop 06 First Steps C, Word Lists: Self Teach - https://peta.phonicsbooks.com/).
  - Reading:** When you have read one of these new books don't forget to do the quiz. (The Park, A Cat and A Rat, In the Morning - (EZ), Rainy Day, A Call to the Pool, The Singing Bird, Seeing Stars, My Friend, My House, My Family). Read two Kiwi Phonics Books every day.
  - Phonics:** Short Vowels - Sadler, Short Vowels 'e', Short 'a' Letter Fall, Picture Match, Short Vowel Game, Short Vowels 'u', Blends, S-Blend Game, Word Blender, Whizzwords.
  - Fluency Sheets:** Short Vowels 1.
  - Maths:** Maths Quizzes (That Quiz - adding and subtracting Level 2, That Quiz - Counting, That Quiz - Time), Measurement (Measurement Game), Number Facts (Fruit Shoot - subtraction/take away, Pop Up - adding, Pop Up - subtracting, Word problems 3, Number Twins 7, Number Twins 9, Number Twins 10, Coolmath - Count the Cubes, Add to Ten - Math Lines), Place Value (Place Value Models - 1000, Place Value Chart - 1000, Place Value 3), Number Sequence (Count the Pictures, Count and Type, Skip Counting 1, One False Move, Spooky counting in 5's - oswego), Fractions (Fractions - Parts of a Whole, What is a Fraction?, Fraction Flags, BBC Fractions, BBC Fractions, Shade a half, Calculator Maths, Worksheet 1).

**Student's View (Right Panel):**

- Main Content Area:** Displays a grid of resources for 'Peta's Place'. The resources include:
  - Plans:** Peta's Learning Plan, Weekly Checklist.
  - Literacy:** Steps to Literacy (Steps Book: First Steps C, Steps Computer: on PC 3 and laptop 06 First Steps C, Word Lists: Self Teach - https://peta.phonicsbooks.com/).
  - Reading:** When you have read one of these new books don't forget to do the quiz. (The Park, A Cat and A Rat, In the Morning - (EZ), Rainy Day, A Call to the Pool, The Singing Bird, Seeing Stars). Read two Kiwi Phonics Books every day.
  - Phonics:** Short Vowels - Sadler, Short Vowels 'e', Short 'a' Letter Fall, Picture Match, Short Vowels 'u', Blends.
  - Fluency Sheets:** Short Vowels 1.
  - Maths:** Maths Quizzes (That Quiz - adding and subtracting Level 2, That Quiz - Counting, That Quiz - Time), Measurement (Measurement Game), Number Facts (Fruit Shoot - subtraction/take away, Pop Up - adding, Pop Up - subtracting), Place Value (Count the Pictures, Count and Type), Fractions (Fractions - Parts of a Whole, Fraction Flags, Shade a half, Calculator Maths, Worksheet 1).

The student's view is a simplified version of the teacher's view, with some content hidden or greyed out. The bottom of the page features a 'Moodle Docs for this page' link and a 'You are logged in as (Username: Tull) (Logout)' indicator.

Figure 51: Peta's Place – An example student section in Annie's classroom displaying resources and activities for a single student. The student's view of the page is displayed on the right, the teacher's view is on the left showing in grey lettering all the content which is hidden from the student, June 2012. (Peta is a pseudonym provided for a student)

The initial motivation behind Annie's decision to start an online classroom was unexpected. As she describes it,

I heard that two other people were going to do it, and I said I will be in on that, so I didn't want to miss out on something new. And at that stage, I didn't really have any great ideas about what I would do with it at all. I just thought, 'Hey how about me. I've got a class and it's something new, and having used Moodle for the units [national assessment standards], I could see there were some possibilities there for students, so that was it really - I didn't want to be left out. (Annie, Phase Three interview)

From that point on Annie's enthusiasm for the online classroom grew, and by October of 2011 she had developed quite strong ideas, as lead tutor, on the way she thought the online classrooms should be used by the At-Base team. She believed that through shared practice they could progress the classroom use even further

I've got to somehow get across to them how I see it working, and bring them in on getting it working that way, and then the three of us then can swap ideas, and may be take this further and bring new ideas into it. (Annie, Phase Two interview 2)

Annie appreciated the ability to observe the online practice of the other At-Base tutors, through the Colleague role. "Knowing that I can see what Belinda's up to, and George, means I know what sorts of things they might need to know, and where we need to go to make this work better" (Annie, Phase Two interview 2). Annie encouraged the other tutors in the development of their online classrooms and led through the example of her own online practice. In May 2012 her planning for future development of the Moodle classrooms included creating a section in Tutors Only, Resources where she could share a wide range of resources with the other At-Base tutors. She wanted "them to ... individualize their pages [sections] for their students quite a bit more" (Annie, Phase Two interview 2), and thought that these shared resources might help them make a more deliberate choice of resources to better fit each student's individual programme.

Even though the continual departure and enrolment of students, and widely individual programmes meant constantly changing the site to keep everything up to date, the benefits that Annie saw the online classroom offering her students continued to motivated her.

I'll keep going with this [the online classroom], and develop it more because the students enjoy it. They get through a lot more, and they can learn things quietly at the computer at their own pace which is very good for adults, really good. And they can go and do things a hundred times if they want to, and they can do it at home, so in that way it's really ideal for adults. (Annie, Phase Two interview 2)

During 2012 there was a significant increase in student turn-over which both reduced the time Annie had to make changes, and required more changes to be made. She commented that, "it's like a railway station, and that's not counting in the people who have come in on trial, and then disappeared on us. It's been really hard this year" (Annie, Phase Three interview). For Annie the lack of time for planning, finding resources and implementing changes was the only disincentive to working on the online classroom.

Annie's enthusiasm for using the online classroom outweighed any difficulties she had, and her commitment to using this online environment extended so far that, as part of the hand over from the developer in July 2012 she chose to take on the majority of the day to day administration of the Moodle site. Annie encouraged George and Belinda in their use of the online environment, and saw the online environment as an asset for teaching and for the organisation as a whole "I've loved it all. It's great, really great. I think this has been a huge thing for us [the ALEC staff]" (Annie, Phase Three interview).

### 5.2.2 "George's Classroom"

George began to develop his online classroom at the same time as Annie, in May 2011. While Annie had created content within Tutors Only, and had been able to use the Lead Tutors' space before developing her classroom, George's only previous experience had been in accessing Tutors Only. He had had no responsibilities within the online environment and had only used Moodle as a student would. Access to Tutors Only at student level, and access to the demonstration classrooms, had provided George with the opportunity to experience a student's view of the tools that he would be using to develop his classroom. George had found this experience within Moodle before creating his online classroom beneficial, "It showed people what Moodle was, what it could do, that sort of thing, what possibilities it had" (George, Phase Two interview 2).

While Annie preferred to 'bash away' and work things out on her own, George, a self-confessed technophobe, accepted the developer's offer of brief face to face support sessions. Two one-to-one meetings focussed on the practical aspects of how to use the tools in Moodle to provide students with links to files and websites, and to add information on to a section, took place in May. George accessed Tutors Only, How To once in May and once in September 2011, to view help documentation on the same tools. He wanted to make sure that he was using the tools correctly. "I'm not good at behind the scenes setting stuff up, formatting and all that sort of thing, that's not a strength of mine ... On my own that would have taken eons to crack" (George, Phase Two interview 2).

The greatest encouragement for George in creating his classroom was Annie's enthusiasm in creating hers.

She let me have a look at her classroom as she was building it, [I] felt quite excited about that. So the way that she has approached it has been a real inspiration to me ... She is in kind of a mentoring role to me ... and seeing her enthusiasm for it... definitely Annie's enthusiasm was pretty big. (George, Phase Two interview 2)

George seldom accessed the demonstration classrooms, only viewing the Educational Design Classroom on four occasions during May as he was developing his online classroom, but he viewed Annie's online practice much more often. As he explained, "her [Annie's] classroom was probably the ultimate demo classroom for my own [classroom] in terms of our programme" (George, Phase Two interview 2). George appreciated having the role of Colleague which enabled him to see the other online classrooms being developed. "It's excellent. That's the short answer... I can see where people are at, and how far ahead or behind I am" (George, Phase Two interview 2). While he viewed

the content of Annie's classroom in 16 different weeks, George only viewed Belinda's classroom once just before her students first accessed her online classroom and once just after. Moodle site logs revealed that, apart from Annie observing his online practice, other tutors seldom viewed the content in George's classroom. Viewed clockwise, Figure 52 shows the number of hits on George's Classroom each week by George and his colleagues. George was active within his classroom in 32 of the 58 weeks when data was collected. The maximum number displayed in the graph has been capped at 500 hits because of the unusually high number of hits (up to 948 hits per week) for the weeks in September and October 2011, when George worked extensively on developing his online classroom.

George's students worked in a single physical classroom at grouped tables with four computers in the room all situated against one classroom wall. This gave them less access to computers than Annie's students. George taught his students in a similar way to Annie, working with them either individually or in groups, as well as having the students working independently from their weekly checklist. George had initially intended to use the classroom just for one interested student and to gradually add sections for other students as they became interested, because he felt that his students were not very computer literate. He explained that "none of them are natural computer users. They do a bit of Facebook and stuff, but they are not game players or anything like that, and they don't have any great skills with computers" (George, Phase Two interview 2). However, within the first week of building the classroom George added sections for all his other students, in the same way that Annie had in her classroom. The students' sections in his course were titled "*Studentname's Site*". Most of the design of George's online classroom mirrored Annie's including the colourful theme chosen for decoration.

The layout of George's online classroom was simpler than Annie's (see Figure 53). On the left of George's Classroom was the course menu with links to each section of the classroom, and on the right the calendar and associated upcoming events block were displayed. The centre of the Welcome page of George's online classroom contained a message to his students to welcome them and explain a little bit about the classroom, but none of the interactive elements, such as forums, that Annie had provided in hers. The News forum was used six times by George to display messages to students, but there were no forums available for students to communicate with each other. While the calendar was visible within in the online classroom it was not used to communicate information to the students.

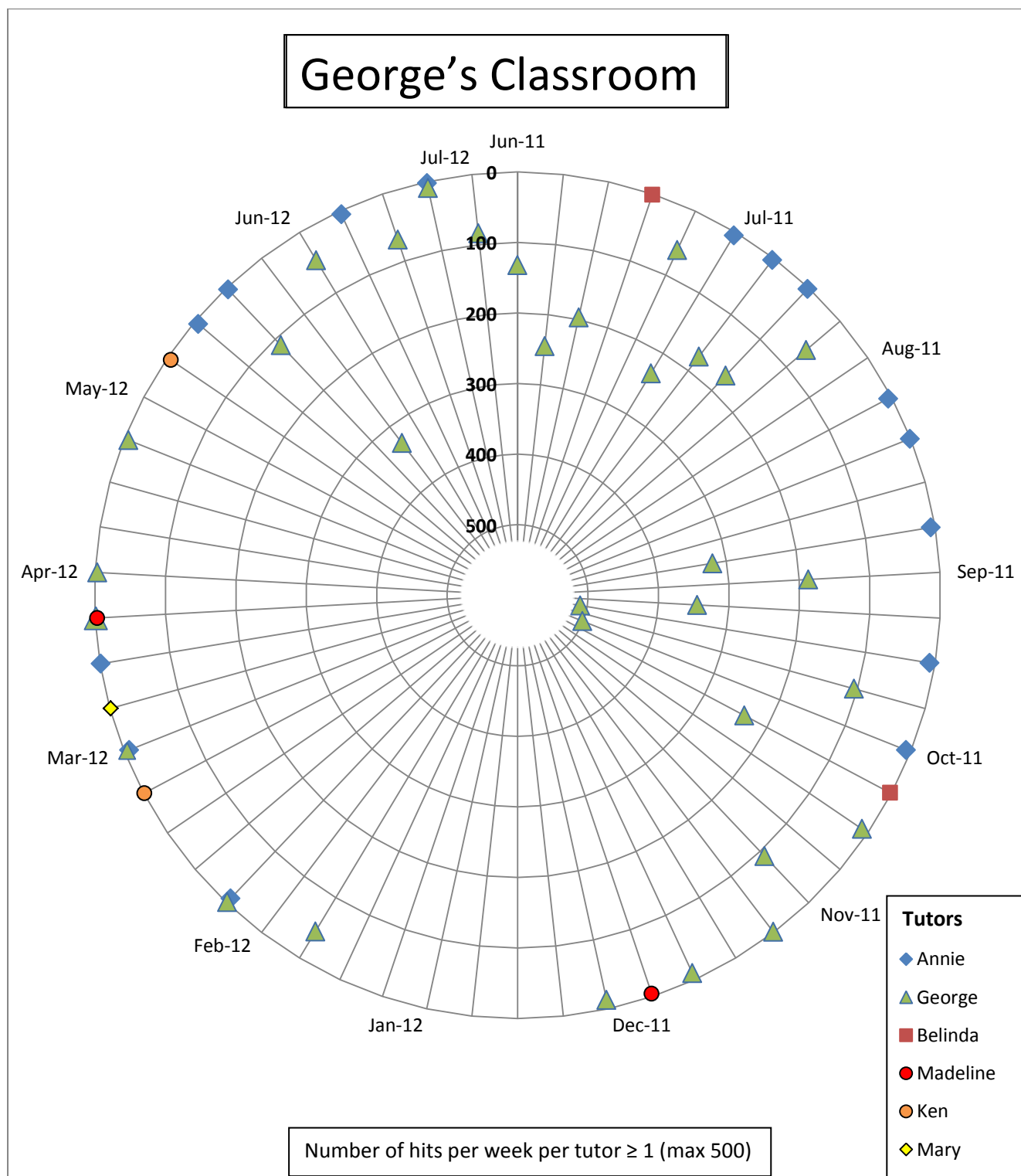


Figure 52: Tutor hits on George's Classroom June 2011 - July 2012 by all staff with online classroom access, showing the number of hits per week per staff member to a maximum of 500 hits. (The more central the marker, the greater the number of hits by that person in that week)



George's students accessed his online classroom for the first time on the 20th of June 2011. The students each had an individual learning plan as George explained, "They've all got their own program... Each resource on the Moodle is linked into their abilities, linked into their steps on the learning progressions ... and they go on [the online classroom] every day" (George, Phase Two interview 2). When a student clicked on their named section in the course menu, their section opened and the course menu remained visible on the left and the calendar on the right. The section itself contained links to websites with activities and resources for students to learn from and to practice their skills in numeracy and literacy. They were guided within the online classroom by their learning plan for each school term, and their weekly check list. As they did in Annie's classroom, links to both of these documents appeared at the top of each student's section in the classroom.

In developing his online classroom George gradually increased the content of the students' sections with links to suit each student's learning level. These links were originally listed under broad headings but, as the number of resources on each section increased, George added subheadings to organize the content (see comparison of Figure 54 and Figure 55). During the first four months of students using his online classroom there occurred what George termed a 'tipping point' when his own enthusiasm for the online classroom developed.

The students started engaging ... So, when they started becoming enthusiastic and that [the online classroom] started becoming useful in my classroom, not just another thing that I had to do, that's where the tipping point happened and I started heading into it as much as I could. (George, Phase Two interview 2)

Once a section had been fully developed for each student, unlike the sections in Annie's online classroom, the content remained fairly static with only a few items being hidden from student view. George grew confident in the aspects of online classroom he used throughout the first year and wanted to incorporate other uses for his students.

I'm happy with my ability to set up a site [student's section]... I need to become more efficient at changing existing sites to suit a new learner ... and I would like to get my students using it more as a social media, ... I'd like to get them to communicate with each other more, using the site [online classroom]. (George, Phase Three interview)

George planned to have his students create content for the online classroom and considered the possibility of using the classroom in different ways than Annie did. In October 2011 he discussed with the developer the idea of having sections within the online classroom for groups of students who were working at the same level, particularly in Maths, so that they would be able to work together in "little communal groups with shared resources and share ideas. They'd use the forum more ... and just create a little, what you'd call a little community of practice ... in groups of two, three, or four" (George, Phase Two interview 2). Unfortunately the increasing turnover of students in George's class made this impractical for him to implement in 2012.

With the added commitment of studying for a tertiary qualification, lack of time to work on developing the online classroom was the constraint which seemed most difficult for George to overcome. In 2012 the constant turnover of students, and an influx of students at higher levels of literacy than previous students, added an extra level of complexity to the development of his classroom. When a student left, the section could not be quickly redeveloped for use by a new student, because their literacy levels were often too different. New resources, at a higher literacy level, needed to be found and added to the section. George's online classroom required much more time and effort to maintain than it had in 2011. During 2012, George's new students were required to complete additional national standards assessments qualifications. To support them, George made greater use than in 2011 of the assessment standards resources, which Annie had added to Tutors Only, Resources.



The screenshot displays the 'George's Classroom' website interface. At the top, a navigation bar includes 'HOME', 'COURSES', 'CONTACT', and 'LOGIN'. The main header area shows 'George's Classroom' and a user profile for 'George'. A 'Course Menu' sidebar on the left lists various site links, with 'Ethan's Site' highlighted. The main content area is titled 'Ethan's Site' and features a greeting: 'Hi Ethan- Have a go at tenses today. George'. Below this, there are sections for 'Reading / Writing' and 'Maths'. The 'Reading / Writing' section includes links for 'Past / Present / Future', 'Writing Sentences', 'One or Many', 'Verb and Subject', 'Syllable Video', 'Vocabulary (words to know)', 'Antonym / Synonym', and 'Phonics Short Vowel ABC'. The 'Maths' section includes links for 'Timestables', 'Fractions', 'Subtraction (-)', and 'Addition'. On the right side, a detailed view of 'Ethan's Site' is shown, listing various resources and activities under different categories: 'Steps Level - Steps 2', 'Spelling List - NZ Basic 100 3', 'Homonyms', 'Learning Plan', 'Weekly Checklist', 'Literacy', 'Writing', 'Phonics', 'Vocabulary', 'Spelling', 'Own Interest', 'Maths', 'Number Facts', 'Maths Quizzes', 'Number Sequence', 'Place Value', and 'Time'. Each category lists specific activities or games available to the student.

Figure 54: Ethan's Site - A student section in George's Classroom, displaying resources and activities for a single student, July 2011. (Ethan is a pseudonym provided for a student)

Figure 55: Ethan's Site - A student section in George's Classroom, displaying resources and activities for a single student, June 2012. (Ethan is a pseudonym provided for a student)

In spite of the difficulties that the continual changes in student enrolments caused in maintaining the online classroom in 2012, George remained enthusiastic about the use of his online classroom.

I'm really, in the long term really committed to continuing on with the Moodle site for my learners ... because I can see that it's a real key tool for them in terms of them taking some control over their own learning. (George, Phase Three interview)

The benefit of the online classroom that George appreciated most was the opportunity it provided for his students to become more independent. As well as making resources and links to activities on websites available on each student's section, he encouraged them to search the internet themselves for relevant activities. "I think we've only scratched the surface of what they can do ... but it's shown them that they can go off and find resources, bring them back, use them, and evaluate them, and that's been brilliant" (George, Phase Two interview 2).

George's commitment to being involved with the ALEC Moodle site as a whole, extended to volunteering to help Annie develop a shared section of links, in Resources, which were designated as suitable at various levels of their students' abilities. His use of an online classroom for his students was one that he could see continuing in any future employment,

Even though it's been difficult to keep up and running and improve, it's top on my list in terms of things to continue on with anyway. And I'll be taking it with me, or the idea of it with me, wherever else I teach. (George, Phase Three interview)

For a self-confessed 'technophobe', this signalled a significant change in attitude.

### 5.2.3 "Belinda's Classroom"

Belinda was the last of the At-Base tutors to develop an online classroom for her students. While Belinda did not use the term 'technophobe' to describe herself, at the beginning of her online classroom development she feared having to use new technology and had very little experience with computers. Belinda relied more heavily than George on the help resources available within Tutors Only to support her, "the Help part in the [Tutors Only,] How To I've made a lot of use of, and if I got stuck I'd ask the others [tutors]" (Belinda, Phase Two interview 2). By the end of this phase of the research Belinda felt that the Moodle site, and the creation of her online classroom, had been of benefit to her, as well as to her students, because it had helped her to overcome her anxiety in using computers. As she explained,

I had a mental block at anything to do with that [computers], and I kind of knew it. It had been hanging over my head a bit for a few years in some ways (if you're like that, it can) and I'd been basically afraid of the computer, and that's gone now. (Belinda, Phase Three interview)

Belinda was unable to attend the initial demonstration of the Moodle classrooms. She had difficulty in finding time to meet with the developer, and consequently began planning and building her online classroom two months after Annie and George. While designing her classroom, Belinda viewed the demonstration classrooms on five occasions, four of them before her students accessed her online classroom. She also accessed the classrooms of the other At-Base tutors to see their online practice;

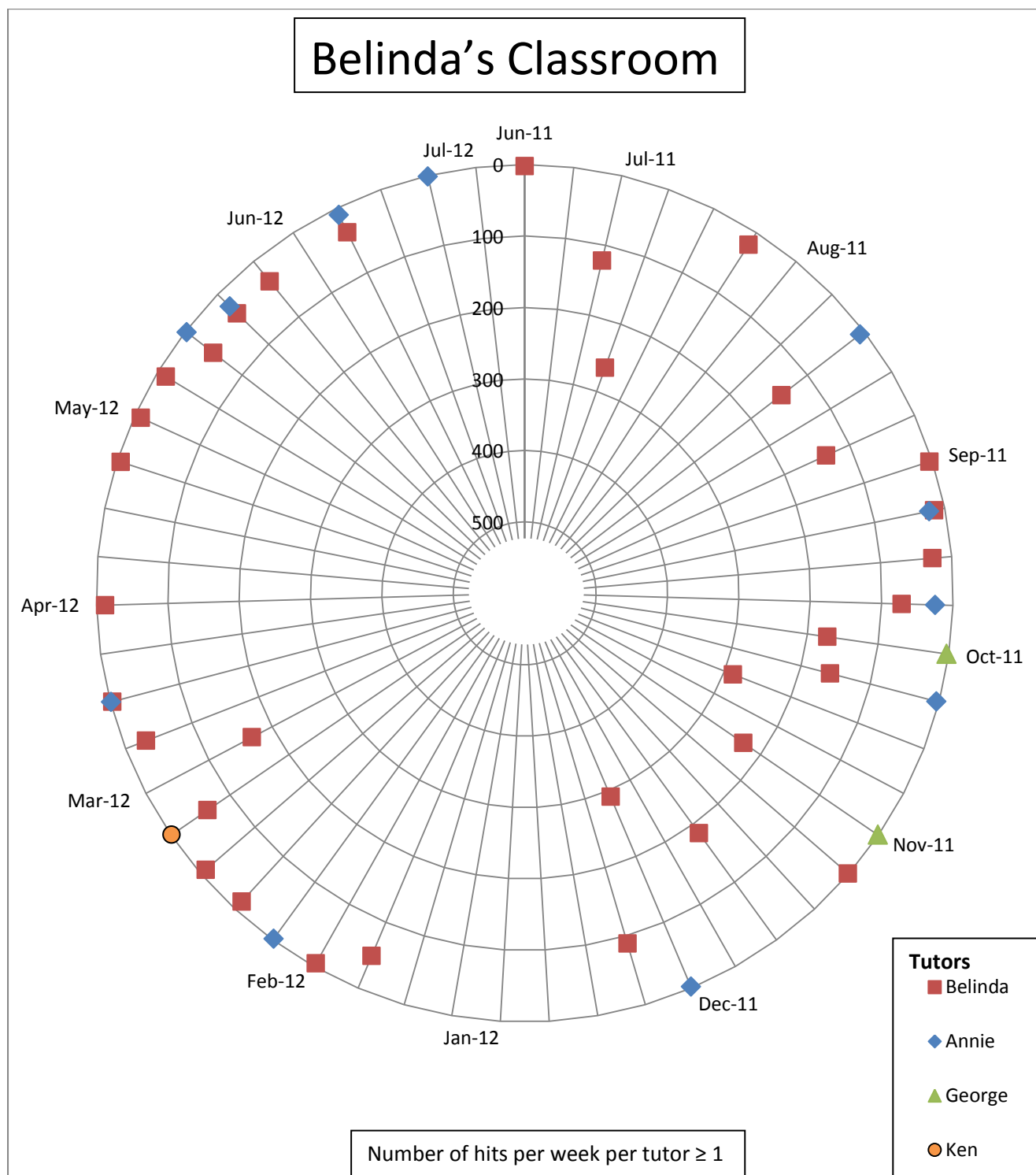
Annie's much more than George's. Belinda found working with the other tutors and being able to access their online classrooms very helpful because it gave her the opportunity to see which resources were being offered by Annie to students working at the same level as her own students. She found benefit in,

talking with George and Annie and having a look at what they have got, that sharing of resources ... we do, we talked a lot about what we have got, and then of course we can go and have a look [online] and then you can just go, and take a copy and pop it on. (Belinda, Phase Three interview)

Belinda was active within her classroom in 34 of the 55 weeks when data was collected, and viewed the content of Annie's classroom in 21 of those weeks, but only viewed George's classroom online twice. Belinda's classroom was only visited three times by other tutors, apart from Annie observing her professional practice, and the way in which the online classroom was being used (see Figure 56).

In 2011, when Belinda built her online classroom, her physical classroom situation was quite different from that of George and Annie. Belinda's students, who were at a higher academic level, all attended classes at a nearby high school for some of their subjects, and were taught and supervised by Belinda in her classroom for the remainder of the teaching day. The students all had individual programmes which included a timetable for their regular school classes with other subject teachers, and the national standards assessments they were working towards. In Belinda's classroom the students worked at grouped tables with four computers situated against one classroom wall but, because the timetabled school classes took precedence, Belinda taught her students between their other lessons and supported them in completing work set for them by their other teachers. Consequently her students made much less use of the online classroom than Annie or George's students, who were always in the same classroom and had access to a computer and the online classroom all day.

[The online classroom] hasn't been as intense a focus as if my students were not in the school. If they were here all the time and they were all at a lower [academic] level, then ... I would be really focussing a lot more on it [using the online classroom] because it would be appropriate and necessary, and extremely useful for their day-to-day progress." (Belinda, Phase Two interview 2)



**Figure 56: Tutor hits on Belinda's Classroom June 2011 - July 2012 by all staff with online classroom access, showing the number of hits per week per staff member. (The more central the marker, the greater the number of hits by that person in that week)**

The design Belinda chose for her online classroom was very similar to Annie's and George's, but simpler. Belinda chose to keep a plain white theme with very little decoration. On the left were the course menu and the activities block and on the right the calendar was available for student use, but

no events were added to it. The Welcome page of Belinda's classroom contained no text, but displayed the News forum which was used three times to display messages to students and to provide some instructions for them. There were no forums for students to communicate with each other; although this was something that Belinda had mistakenly encouraged her students to do through the News forum (see Figure 57). A section had been created in the online classroom for each student with their first name as the title. Belinda added a section titled "Everybody's section" as a space for all students. Here she added links to two websites she wanted all students to use, as well as instructions on how to view video clip resources which were in the 'ClickView' repository available via the school her students attended.

The screenshot shows the 'Belinda's Classroom' interface. At the top, it says 'You are logged in as Susan Tull: Student (Return to my normal role)'. Below this is a navigation bar with 'ALEC > Belinda' and a 'Return to my normal role' button. The main content area is divided into three sections:

- Course Menu (Left):** A list of sections including 'Belinda', 'Catherine', 'Everybody's section', and 'Trial Student'. There are also links for 'Show all', 'Participants', and 'Gradebook'.
- News (Center):** A list of three posts:
  - You can all post messages on this page.** by Belinda, Friday, 18 November 2011, 03:27 PM. The post text says: 'You can use this page too, if you want to post messages to one another. Just go into forum, write your message and then click 'post to forum' at the bottom of the page. Cheers Belinda'.
  - Kahn Academy youtube videos** by Belinda, Friday, 18 November 2011, 03:24 PM. The post text says: 'Hi everyone. I have put some Kahn Academy youtube videos on all of your pages. Have a look, they are really good. Cheers Belinda'.
  - Instructions for using ClickView are on everybodys section** by Belinda, Friday, 12 August 2011, 02:44 PM. The post text says: 'I have set up some activities for you all, using ClickView. You will see the required activities listed on your page, then go onto everybodys section to follow the instructions.' A link 'Older topics ...' is at the bottom right of the news section.
- Calendar (Right):** A calendar for July 2012. The 'Events Key' shows 'Global' (blue), 'Course' (orange), 'Group' (green), and 'User' (red). The 'Upcoming Events' section says 'There are no upcoming events' and provides links 'Go to calendar...' and 'New Event...'.

**Figure 57: Belinda's Classroom, displaying the Welcome page and showing the sections for each student in the course menu on the left, the calendar on the right and the news posts in the centre, (July 2012)**

Belinda's students began using the classroom in October 2011, four months after the students of the other At-Base tutors. A student clicked on their name in the Course Menu to open a section in the online classroom which Belinda had developed for them, four of these had been personalised with a graphic relating to each student's interests. Each section contained the student's individual learning plan and their weekly timetable, which did not include timetabled use of the online classroom. Under these items were added links to websites where students could practice their skills, and links to "ClickView" video material to support their learning.

Belinda's students were guided verbally by her in their use of the classroom.

I go over, and I say 'well, what would you like at the moment ... literacy or numeracy?' and then we will go in to look at what is it up there [in their online classroom section] and choose what's the best... If I see them working, and having a problem with something then I can go and get them on their Moodle [section] and get them working on that particular thing. (Belinda, Phase Three interview)

Initially each student's section contained a mixture of resources and activities, but these were reorganised under subject headings as Belinda continued to develop the sections, and the number and variety of resources recommended for each student increased (see comparison of Figure 58 and Figure 59). In June 2012 Belinda added a section titled 'Trial student' which she intended to develop for any students who joined her class on a trial basis, so they could use the online classroom in the same way as her permanent students.

The screenshot displays the Moodle interface for 'Belinda's Classroom'. At the top, it indicates the user is logged in as 'Susan Tull (Logout)'. The main navigation area on the left includes a 'Course Menu' with a list of sections: 'Belinda', 'Catherine' (highlighted with a red oval), and 'Trial student'. Below this are links for 'Participants' and 'Gradebook'. The 'Activities' section on the left lists 'Forums' and 'Resources'. The main content area for the 'Catherine' section shows a title 'Catherine' and a list of resources: 'Your ILP and timetable', 'BBC skillswise', and 'Grammar'. A photograph of a bakery display is also visible. On the right side, there is a 'Calendar' for October 2011, an 'Events Key' with icons for Global, Course, Group, and User, and an 'Upcoming Events' section stating 'There are no upcoming events' with links to 'Go to calendar...' and 'New Event...'.

Figure 58: Catherine - A student section in Belinda's Classroom, displaying resources and activities for a single student, October 2011. (Catherine is a pseudonym provided for a student)



The screenshot displays the Moodle interface for 'Belinda's Classroom'. At the top, it indicates the user is logged in as 'Susan Tull: Student'. The main header shows 'Belinda's Classroom' and 'ALEC > Belinda'. A 'Return to my normal role' button is visible. The left sidebar contains a 'Course Menu' with links to 'Belinda', 'Catherine' (highlighted with a red circle), 'Everybody's section', 'Trial Student', 'Participants', and 'Gradebook'. Below this is an 'Activities' section with links to 'Forums' and 'Resources'. The main content area for 'Catherine' includes a 'Learning plan', 'Catherine's timetable', and a list of resources: 'vocab.com', '333 method to learn spelling', 'First 300 NZ words', 'Their, they're, there', 'short vowels etc', and 'BBC skillswise'. A 'Grammar' section follows with instructions on using ClickView and a list of grammar exercises. Below that is a 'Maths' section with links to 'Oswega maths', 'Place value game', 'that quiz', 'maths games online', 'Adding, subtracting and multiplying fractions', 'Times tables video', and 'Ted Ed'. On the right, a 'Calendar' for July 2012 shows no upcoming events. An 'Events Key' section below the calendar identifies icons for Global, Course, Group, and User events.

**Figure 59: Catherine - A student section in Belinda's Classroom, displaying resources and activities for a single student, July 2012. (Catherine is a pseudonym provided for a student)**

Belinda's online classroom was used far less often by her students than George or Annie's online classrooms in these phases of the research. On average George's students accessed their online classroom five times as often each month as Belinda's students and Annie's students twelve times as often. In Belinda's class in 2012 many of the new students were working at a much lower literacy level than her previous students, and not all were capable of taking classes at the nearby high school. Belinda found that the online classroom was more helpful for these students, and it was used more often than in 2011. Belinda explained that "it's a whole different scenario again. So I make it work to fit me - and it does" (Belinda, Phase Three interview).

The value Belinda saw in using the online classroom was the potential independence it offered her students. She commented that "it was the idea of them being able to go on to that [the online classroom] to be independent, and for things to be there for them so that they can be self directed as well" (Belinda, Phase Two interview 2). While Belinda was happy with the way the online classroom was being used by her students, she was keen to continue develop it further. "I would like to expand on my Moodle [classroom], and I'd like to expand on it more to suit my students, and I can see that as being really worthwhile" (Belinda, Phase Two interview 2).



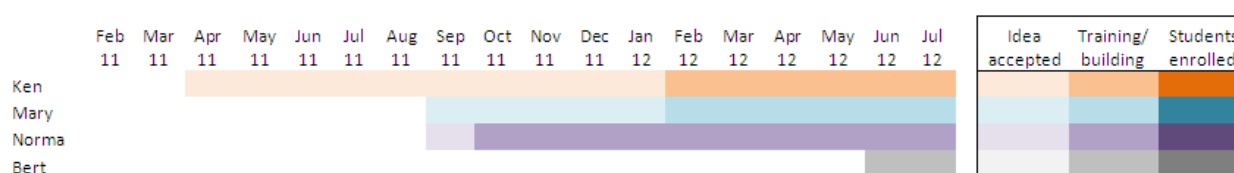
## 5.3 Phase Three:

### Online classroom developments for all other tutors

The off-site tutors consisted of two groups. Community tutors who worked with clients in groups, often brought together by charitable organisations within the wider community, in whatever venue is made available to them by that organisation. Workplace tutors taught clients identified by workplaces that had contracted ALEC to teach their workers, individually or in small groups, in venues provided by the workplace. These off-site tutors taught different programmes from each other, worked different hours, had different holiday breaks and only saw each other once a fortnight at team meetings. While the Workplace tutors in particular made frequent use of the Tutors Only, Resources to access material for use with their clients, this material was most often given to their clients in printed form. Neither of the lead tutors for these groups had easy computer access for their clients during teaching sessions, but two tutors from each group became interested in developing an online classroom for their clients. This section of the thesis looks in detail at their attempted adoption of online classrooms.

Ken, a Community tutor, was approached with the idea of having his own online classroom in April 2011. Of all the tutors who taught off-site, he initially seemed most enthusiastic about the idea of an online classroom. Interest in the use of online classrooms began among the other Community and Workplace tutors after the At-Base tutors spoke about the benefits of their students using them. When a tutor expressed an interest in developing an online classroom the developer made an empty online classroom available for their use. Before the developer met with the tutor, she enrolled them as a student in the demonstration classrooms, and gave them the Colleague role which allowed them to see the online classrooms of the other tutors.

The development of online classrooms by each of the four off-site tutors is described in the following sections. This begins with Community tutors Ken and Mary, followed by Workplace tutors Norma and Bert. A timeline of the developments can be seen in Figure 60.



**Figure 60: Timeline of online classroom developments by Community and Workplace tutors participating in Phase Two meso-cycle two and Phase Three, April 2011 to July 2012**

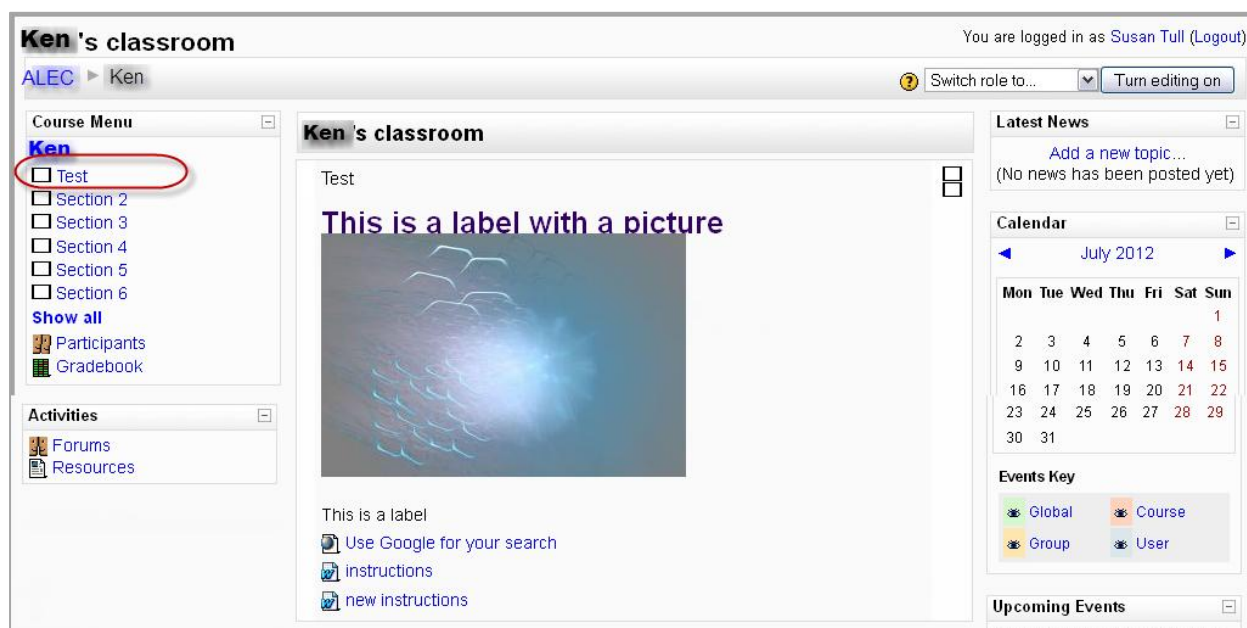
#### 5.3.1 “Ken’s Classroom”

Ken, a Community tutor, was shown the demonstration classrooms in early April 2011. The developer recorded that “Ken was able to see ways in which it could be used with his students ... and is going to plan some uses of Moodle for one of his classes and then email me when he’s ready to build it online” (Design narrative, 16/4/11). Unfortunately that email never arrived. As a point of contact and possible encouragement to take further steps in developing an online classroom, in late

February 2012 the developer emailed a file used to enrol students in a Moodle classroom to Ken. This resulted in a response and led to the creation of an online classroom and the developer meeting with Ken to share her expertise in online practice as he was introduced to the teacher tools in Moodle tools to develop an online classroom. At Ken's request his Community clients were enrolled in the online classroom the same day. Ken practiced in the section he renamed 'Test' (see Figure 61) and the developer recorded that "he really liked the idea and seemed enthusiastic." (Design narrative, 27/2/12).

Ken appreciated the opportunities for shared practice offered by the Colleague role, and the ability to observe the online practice of other tutors,

It is a great system, it's a vicarious thing to look at what other people are doing ... and see the interactions between other tutors and their learners ... You can pick up things, mostly good things that you can emulate. There might be the odd thing that you think "Oh, I wouldn't do it that way" but that's all really useful and a very sharing experience. (Ken, Phase Three interview)

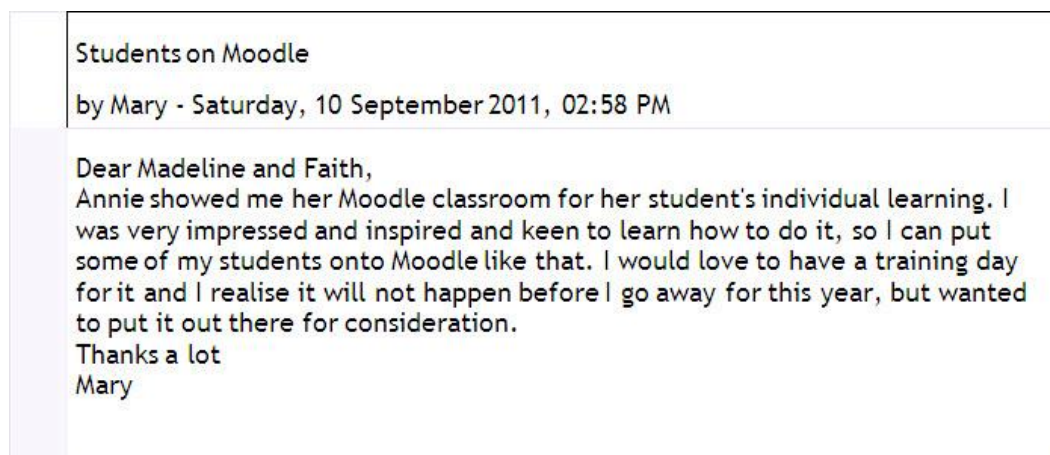


**Figure 61: Ken's Classroom, displaying the Test section and practice content, July 2012**

While no further development of Ken's Classroom took place during the study, Ken continued to be enthusiastic each time the topic of online classrooms was discussed with the developer, "Yeah. I think that [having an online classroom] is a great idea." (Ken, Phase Two interview Aug 2011) "I'm getting quite enthusiastic as I talk, and keen to get it going." (Ken, Phase Three interview, July 2012). Ken described the cause of his lack of development of the classroom as "laziness", but further discussion helped to define this as his sensible choice to prioritise his personal life over his work, outside his teaching hours. "I've just been very busy and I haven't got round to it. I've still got the best of intentions and I have told my learners that it is coming" (Ken, Phase Three interview).

### 5.3.2 “Mary’s Classroom”

Mary was a community tutor working with one of larger Community groups who had access to three computers for her clients. She was the only tutor to post in the ALEC online environment about the use of an online classroom (see Figure 62).



**Figure 62: Post about online classrooms by Mary, in the General Discussion forum, September 2011**

The developer was thrilled to see this post and hoped that it would encourage interest from other off-site tutors, but it did not. The developer met with Mary when she returned from her holiday and shared her expertise in online practice while introducing Mary to the tools in Moodle, early in February 2012. “Mary’s Classroom” had a section titled ‘Reading’ and a few practice items added to this first section (see Figure 63). Mary planned to develop a classroom design on paper in the following two weeks, so a second meeting was planned to implement her design online.



**Figure 63: Mary’s Classroom, displaying the Reading section and practice content, February 2012**

In planning her classroom Mary found it very helpful to be able to see the other tutors' online practice.

I know that simple is what they [Mary's clients] need. So I could see there, how I would do it differently, and her [Annie's] stuff that she's got about them planning their learning – I really like that ...and the variety of things she has got ... I like the fact that they can talk to each other if they want, and I'd probably do some sort of something around that just for fun really – and for them too because one of the things we teach is communication and I think that would be good for some communication stuff. (Mary, Phase Three interview)

Mary also valued what she saw in the demonstration classrooms. "When I looked at your patterns it was good to see different ways of doing it ... The teachers they were sort of doing it the same way, but you gave alternatives ... they were great, wonderful" (Mary, Phase Three interview).

At the end of February 2012 the developer sent an email to Mary, containing the file to gather student details for enrolment in the online classroom, and to ask whether another meeting would be helpful. Mary's response was not one that the developer had considered, or was prepared for. Because of the lack of time to develop the online classroom herself, Mary had advertised for and recruited a volunteer to develop the online classroom on her behalf. The developer met with Mary to discuss the implications for her teaching, and use of an online classroom designed by someone else who may have different design ideas. Issues also arose with the introduction of a volunteer to the shared practice that has been created within the Classrooms category in the ALEC online environment. There were ethical challenges in allowing a volunteer to have the Colleague role which allowed them to see into other tutors' teaching spaces and view their students' work, as well as the question of how much of Tutors Only a volunteer should have access to. Discussions took place with the ALEC manager, and the issues were resolved by gaining the permission of the other tutors who had online classrooms for the volunteer to have access to their classrooms; giving the volunteer access to only Tutors Only, How To; and having the volunteer sign the organisation's contract, which included a confidentiality clause.

The developer met with both Mary and the volunteer, Sarah, late in March, providing Sarah with an introduction to the online environment and refreshing Mary's knowledge. A little more content was added to the classroom as they practiced. Mary and Sarah met once more without the developer, to finish planning the classroom design. Unfortunately Sarah was unable to continue volunteering and did not complete any of the developments that had been planned. Mary found that the process of planning the classroom with Sarah had been worthwhile, because it clarified for her what she needed to do,

I need to put it [developing the online classroom] into steps or stages and not to try and do it all at once... I've learned a bit through the process ...I think it was probably too big for her [Sarah] as well. I've got clearer about the process, and I think it just needs to be broken down into those steps. (Mary, Phase Three interview)

Mary remained positive about the online classroom that she had planned and felt that the plans she had already made would be of benefit when she had time available to develop the online classroom for her learners. "I was feeling quite excited about it all really. ...it is exciting - when I get to it" (Mary, Phase Three Interview July 2012)

### 5.3.3 "Norma's Classroom"

In October 2011, following a discussion between the manager and the developer on ways to include more shared practice in Tutors Only, Norma was asked by the manager to create content for the newly added 'Shared Learning' section created in Tutors Only, Resources. The developer met with Norma, a Workplace tutor, to provide an introduction to the teacher tools within Moodle. During this meeting the developer was able to continue the discussion about the teaching possibilities available in an online classroom using those tools, and as a result an online classroom was set up for Norma (see Figure 64).

Norma had expressed some initial interest in developing an online classroom for her Workplace clients during an interview a few months earlier. "I would be interested because I've got two [clients] in particular who really, really need stretching and I could only do just so much in an hour" (Norma, Phase Two Interview, August 2011). The intention was that Norma would use the online classroom for individual Workplace clients who needed work to do outside of tutoring sessions. She was initially going to set the classroom up for fictitious clients and develop it during 2011 for use with real clients in 2012. Norma explained, "I wanted to set up a classroom because in my last job 90% of people had access to a computer" (Norma, Phase Three interview). However, Norma's Workplace client situation changed significantly during 2012 and she did not feel that developing an online classroom should be a priority in the use of her limited preparation time.

The screenshot displays the Moodle interface for a course titled "Norma's Classroom". At the top, it indicates the user is logged in as "Susan Tull" with a "Logout" link. Below the course title, there is a "Switch role to..." dropdown and a "Turn editing on" button. The left sidebar contains a "Course Menu" with a list of sections from "A place to start" to "Section 12", a "Show all" link, and links for "Participants" and "Gradebook". The main content area features a "News" section with a button to "Add a new topic" and a message stating "(No news has been posted yet)". The right sidebar includes a "Latest News" section with a link to "Add a new topic..." and a "Calendar" for July 2012. The calendar shows dates from 1 to 31, with some dates highlighted in red. Below the calendar is an "Events Key" with icons for "Global", "Course", "Group", and "User".

Figure 64: Norma's Classroom, displaying the Welcome page and showing other section headings in the Course Menu on the left, July 2012

Norma had found the demonstration classrooms helpful in planning for an online classroom, and was encouraged by “just hearing them [tutors with online classrooms] when we were having meetings together, the advantages they were getting, and the learners’ advantages” (Norma, Phase Three interview). She could also see the benefits in the Colleague role,

You can ...see what they [tutors] are doing with them [clients] without them being conscious of you being in the room. Often we get stale when we’re teaching so it’s good to see the way someone else is doing a similar sort of thing. (Norma, Phase Three interview)

While Norma did not develop her classroom at all, she was still positive about the idea and open to using an online classroom should her situation change. In her comments in the final research survey she explained her reasons for still wanting an online classroom,

I can see the vast potential in that learners can learn without me being over their shoulder. Personal experience has proven that students using computers succeed much quicker than with pen and paper as it is less threatening - doesn't show bad handwriting etc. It is just a pity that my last organisation didn't have internet and that some of my learners didn't have time/equipment for them to use outside my own classroom ... Should I ever have a group situation - I definitely will give this a go. (Norma, Final survey)

### 5.3.4 “Nationwide Clients”

Bert, a Workplace tutor, joined the ALEC organisation in 2012 to tutor clients of a nationwide workplace. A Working Groups space had already been created within the ALEC online environment for all the tutors of this workplace across New Zealand. This *NationWide* collaborative tutors space was not a part of this study. Madeline, the manager, suggested that developing an online classroom for the clients from *NationWide* would be a worthwhile extension. The initial development of the *NationWide* Clients classroom took place in June of 2012 (see Figure 65). This online classroom was not developed further before the end of the research data collection in July 2012.



Figure 65: NationWide Clients classroom, displaying the Welcome page and showing other section headings in the Course Menu on the left, July 2012



The developer had hoped that more of the tutors who worked off-site would have developed online classrooms for their clients. Eight out of ten Community and Workplace tutors indicated that a lack of access to reliable computer equipment or internet had discouraged them from taking up this opportunity. One of the causes of this lack of access was the disruption caused by the series of major earthquakes and aftershocks which started at the end of Phase One and continued throughout the rest of the research. The earthquakes and their impact will be discussed in detail in the following chapter.

## Chapter 6 Earthquakes

The major earthquakes of 2010 and 2011 have revealed the research setting as Christchurch, New Zealand. These earthquakes had a major impact on the research and its outcomes, but comment on it has largely been reserved for this chapter. This has allowed a greater focus within the rest of the thesis on other, more common, factors which influenced the research outcomes.

Four major earthquakes and almost four thousand unsettling aftershocks disrupted the city and its inhabitants throughout 22 of the 24 months during which the data for this research was gathered (see Figure 66). It is difficult to convey the amount of ongoing fear, stress, uncertainty and disruption that these earthquakes and the resulting consequences caused, and so I will not attempt to do so. I will instead record the events, and some of the impacts that these earthquakes had on the ALEC community and its members, the researcher, and the research.

The earthquakes began towards the end of the Phase One of the research. The 7.1 magnitude quake, which took place at 4.35 am on Saturday 4 September, closed the ALEC organisation and much of the city for over a week. Thankfully there was no loss of life. While the ALEC buildings were not damaged, other buildings in the home base area were, and the supply of both electricity and water was unreliable. The professional development day planned for 6<sup>th</sup> September, during which the researcher was to meet with the participants to gather data from the first phase of the research, was postponed until 18 October.

The second major earthquake took place just after lunchtime on Tuesday 22 February at a time when many tutors and clients were in their teaching spaces. While this 6.3 earthquake was less in magnitude it was a particularly violent one, only six kilometres below the surface, and much closer to the city. It caused significant damage as well as the loss of 182 lives. While none of the staff or clients were killed several experienced the loss of someone close, their homes and belongings were damaged or destroyed, and everyone experienced the trauma and major disruption to life which followed. From 22 February the ALEC buildings were closed for four weeks until water and electricity could be restored and the buildings certified as being safe for occupancy. Some order was then able to be restored to teaching spaces and a week later on 21 March, the ALEC home base was again opened to clients. It took a further week before internet access was finally restored. Some of the Workplace tutors were able to return to work earlier than the At-Base tutors, but Community tutors found it much more difficult. Faith explained some of the difficulties she and her clients went through,

Maybe you could be thinking about downloading resources while I was at that place [their original venue], but of course then that got destroyed. I moved to another [community venue] and well, it was [only] a hall. We couldn't pick up broadband ... We eventually moved back to the [original teaching space] at the beginning of this year [2011]. We were there for some days, and then [gesture of walls collapsing] that was the end of that.... the end of our actual computers there as well. (Faith, Phase Two interview)

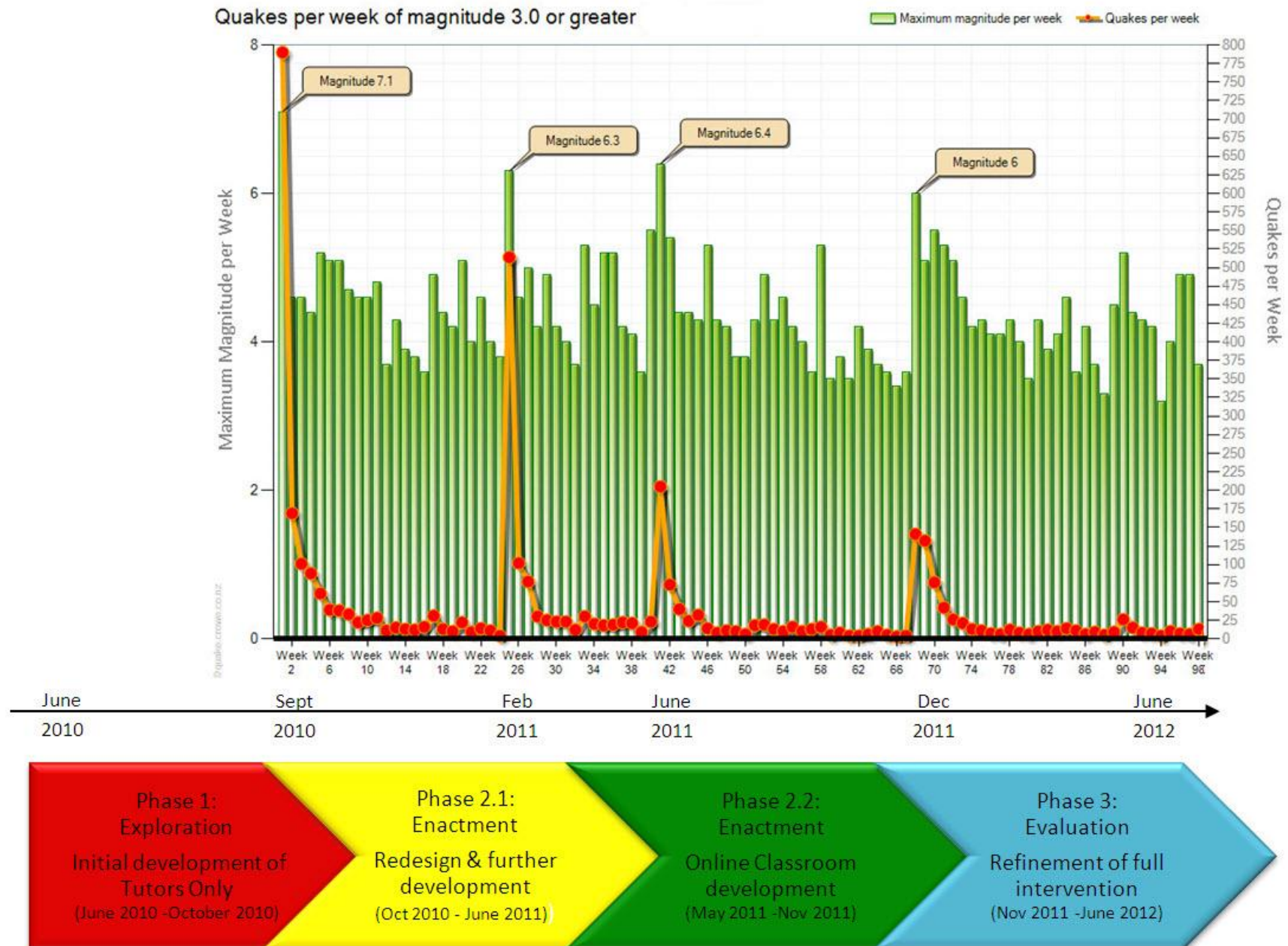


Figure 66: Maximum magnitude earthquake each week and number of earthquakes each week magnitude 3 or greater experienced by the participants and the researcher, shown in relation to the phases of this research

Many community teaching spaces had been severely damaged, destroyed, or were being used for other, more urgent, community needs. These factors made it impossible for most of the community tutors to even consider using an online classroom with their clients.

The third major earthquake day took place on Monday 13 June. No clients were being taught, because it took place during a PD day when all the staff and the developer were together at the ALEC home base. It involved two earthquakes which were centred further away from the city; a 5.9 at 1 pm, and a 6.4 at 2.20 pm. They caused no loss of life, but added to the fear and stress felt throughout the city. The ALEC buildings were closed until their safety had been confirmed and their order restored, but teaching did not resume until the following week so that clients had a chance to recover.

Closure of the centre due to earthquakes resulted in the loss of seven of the year's forty weeks of teaching time in 2011. What is hopefully the final major earthquake took place at 2 pm on Friday December 23<sup>rd</sup> after the teaching year had ended. While this did not affect the ALEC organisation, it continued to affect the staff who had finally relaxed at the end of a very long year, thinking that the major earthquakes were over.

The physical difficulties the earthquakes caused to ALEC were short lived in comparison with the effect they had on the ALEC staff. This began with the shock and tiredness caused by the initial trauma and sleepless nights of ongoing aftershocks. People appeared to recover quite quickly from the September quake. It was thought to be a one off event and people were accepting of the inconveniences it caused. The hundreds of gradually lessening aftershocks of 2010 were accepted as part of the journey back to 'normal'. The February quake, with its greater devastation and accompanying loss of life, had a far worse effect. It was a severe blow to staff and students who were already tired and stressed from five months of aftershocks.

Tutors described their clients as being tired, miserable and anxious as a result of the earthquakes. Madeline highlighted the issue that their clients "are the most vulnerable ones around, and a lot of them were here [At-Base] for the February earthquake" (Madeline, Phase Two interview). Tutors noted that a lack of ability to focus and settle to work was a problem for clients as the aftershocks continued. Because of lost teaching time there was greater pressure for the clients to learn quickly, but as Annie pointed out, "We just had to slow down ... You can't put a lot of pressure on people to focus and learn, when they just can't really focus and learn" (Annie, Phase Two interview). By April, the end of the first term of teaching, both staff and clients were so affected that ALEC began their between term holidays two and a half days early.

George talked about the effect which was most often mentioned by staff. "Since the earthquakes have happened focus and concentration are a major problem not only with my learners, but with myself" (George, Phase Three interview). Faith put it succinctly, "The brain isn't where it should be" (Faith, Phase Two interview). As the year progressed and thousands of aftershocks continued to take place, the resilience of the staff gradually started to wear thin. Annie explained, "You'd walk in here and think, 'What am I doing here anyway?' some days. And I lost the whole flow of everything" (Annie, Phase Two interview). The physical and emotional stress on the tutors also affected their choices in contributing to Tutors Only. Mary described it this way,

I sort of feel like I've been chasing my tail a lot of the year ... it seems like I need a bit more time to ... just do the bare essentials - go in there and get what I need and out again. I could be doing more maybe, if I didn't feel stretched. (Mary, Phase Two interview)

The manager pointed out that “the earthquake has made everybody tired, and people don't have that extra bit of energy to put into something like this [online environment], and that's made a huge difference. And it's been very, very hard on them” (Madeline, Phase Two interview). Two of the three lead tutors explained why they could not be more involved with the Moodle site. “I just didn't have the energy to deal with other stuff” (Annelies, Phase Two interview). “It's just all that extra work you've got to do at the moment, when already life's just too hard” (Faith, Phase Two interview). The tutors recognized that the development of the online environment had suffered as a consequence of the earthquakes. “I think all the disruptions with earthquakes and that have made it not able to be used as well as it should be” (Faith, Phase Two interview), and the manager agreed, “Because of the earthquake, I think it has made it a bit slower, a bit harder [to develop the online environment and classrooms]” (Madeline, Phase Two interview). The development of online classrooms suffered too. Planning meetings were cancelled or postponed because tutors couldn't concentrate and were too tired.

The online environment was able to provide some benefits for ALEC, its staff and clients throughout this difficult time. During the worst of the crisis period when there was no electricity or internet at the ALEC home base, and hence no method of communication from ALEC, the online environment continued to provide a means of communication because it was hosted off shore. The researcher added a post in the News and Notices forum to let ALEC staff know this (see Figure 67).

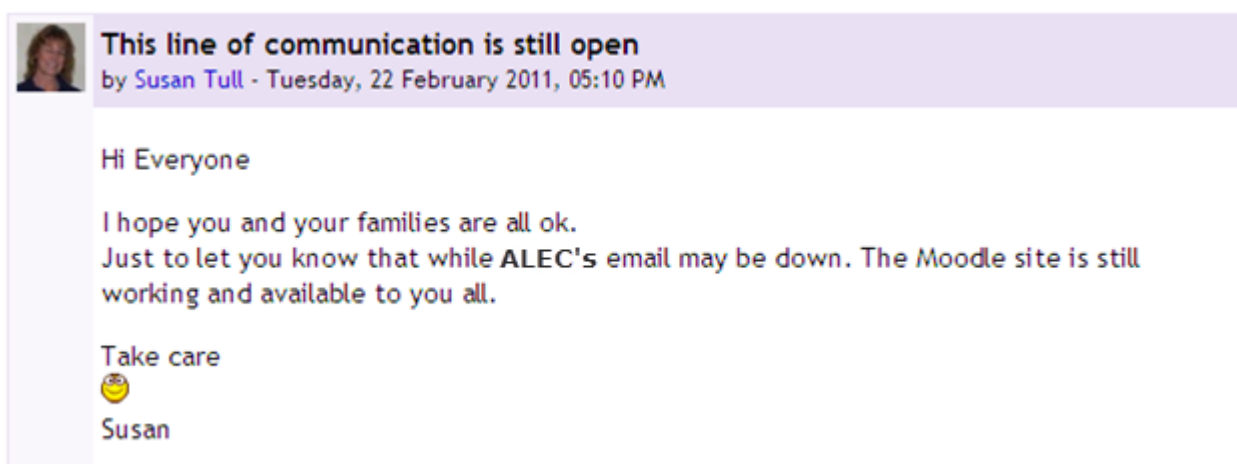


Figure 67: Forum post in the News and Notices forum by the developer, 22 Feb 2011

While the site wasn't used directly after the September 2010 quake, it was used in February 2011. The office administrator described the advantage the online environment provided,

When it [electricity at home] came back on it [Tutors Only] was my only way to communicate because ALEC, I couldn't use the ALEC email ... it was down for quite a while, but I could get into Moodle, so we sent things that way. I was able to read information from Madeline on that and about the earthquakes and things like that. (Agnes, Phase Two interview)

The tutors who had developed online classrooms found them especially helpful in teaching through this difficult time. The change in pace provided by using an online classroom provided variety, distraction and a less stressful environment for clients. Annie explained, "It was a good way for them to kind of chill out, take it easy, they didn't have to really focus ... there was no pressure on them, and Moodle was great for that" (Annie, Phase Two interview 2). She was also able to leave messages in her classroom any time ALEC was closed or she was unable to be there. George found that students who had difficulty returning to the ALEC environment were still able to access learning opportunities from home, and for those who came to ALEC the online classroom was seen as a 'safe space' for students where they could do something new and different. There were also personal benefits for tutors in having an online classroom during these events. George explained,

I've probably relied on it quite heavily since June just because I've been so tired. To give me some space to find other resources or to do some assessments or to mark work, and so I've said, 'Look, I've set this up, have a go at this' ... at the same time it's made me ... quite reliant on using it to get some head space to think about where they [students] need to go next. (George, Phase Two interview)

Annie appreciated her online classroom for quite a different reason, "It really saved me. It saved me, gave me something new to think about and to get interested in, and get everyone else in to" (Annie, Phase Two interview). The researcher/designer/developer shared this feeling about the online environment, and the research, as it also gave her a focus other than the earthquakes.

There were several benefits for other staff too in having the Moodle site available throughout this time. Annelies stated that the earthquakes had helped her "appreciate what Moodle offers" (Annelies, Phase Two interview). Agnes described the benefits of having the ability to communicate with others during the times that ALEC was closed.

After the earthquakes, I noticed people would put things on there about maybe how they are feeling. Everybody knew people were sort of anxious, so there were a couple of nice light hearted jokes on it. But it was also reaching out to everyone to make sure everyone was fine... to see messages there was really nice, because you knew that people cared." (Agnes, Phase Two interview)

In reviewing the data, one comment made by the researcher following the June 2011 quake, stood out as describing the feeling echoed by many of the tutors as the aftershocks continued for another full year.

There seems to have been a change of heart somewhere in the last week. The earthquakes have continued and we all seem to be moving away from 'we'll tidy up and move past this' to 'This is how it's going to be for a while and we'd better get used to it.' It gives a lot of things a whole new look and I think it will be having quite a big effect on my participants. It is certainly having an effect on me. We've stopped planning to 'return to normal' and started looking at the best way to do things the way life is now. For many, this means going back to basics - using what you know you can rely on to always work, and keeping what you know you need close by. (Design narrative, 21/6/11)

The ongoing experiences of being involved in the 2010 to 2012 earthquakes could be summarized by one tutor's comment. "You know, you're kind of waiting for the next one [earthquake] sort of thing, and also just the sheer weight of the year is heavy, you know?" (George, Phase Two interview). We, who lived through it, knew. While the earthquakes had a major impact on the participants, their work environments and this research, the shared experiences of the researcher and the members of the ALEC community also brought them closer together. This unexpected closeness made it more difficult for the researcher to leave the community at the close of the research; careful planning was required. This planning and the processes put in place to ease the transition are detailed in the following chapter of this thesis.



## Chapter 7 Withdrawing from the field of study

The ALEC Moodle site had originally been put in place by Madeline, the manager, and Ken, a tutor who worked in both Workplace and Community teams and had felt quite confident in working with some technologies. In June 2009 the ALEC Moodle site had become the responsibility of the developer, who then completed the initial design and development. The developer needed to be certain that the ALEC community was able to administer and maintain the online environment itself, before she withdrew from the field of study, and her involvement with this online environment in July 2012.

The design based research literature reveals little about the potentially complex process of withdrawing from the research context after an extended period of involvement. Consideration of the ALEC staff was uppermost as the researcher followed the advice to “consider the after effects of leaving and take care to ensure that nobody comes to harm or is worse off from the research” (Cohen, et al., 2007, p.185). The participants had come to include the online environment as a normal part of their practice. It was important that the online environment be sustained and that the participants did not feel abandoned at the close of the research. Ensuring the continued existence of Tutors Only and the online classroom spaces was an essential part of the researcher’s exit strategy. As McKenney, Raval and Pieters (2012) suggest, from their design-based research perspective, the “learning gained from participating stays with the institution even after the research project concludes” (p.11). Through the adoption of a design-based research methodology the professional development and the intervention through which it was enabled were retained in this present context. This was supported by the collaborative nature of the research and the careful process through which the researcher withdrew from the field of study.

The ALEC online environment needed to be sustained by the community members for it to remain an asset to the ALEC community. This ownership of the Moodle site by ALEC staff began with Agnes, the office administrator and Annie, the At-Base lead tutor, who had both participated actively within the online environment and grown in confidence throughout the two years of the study. Annie had sole responsibility for the national assessment standards within Tutors Only, Resources, as well as her own online classroom, and had spent far more time actively participating in the online practice than any other community member. Agnes, as well as adding resources and forum posts, had become familiar with some of the site administration as she added new staff members. Madeline and Ken had retained administration rights in the site, but had taken no active part in the site administration. The developer had automated the process of creating regular backups of courses through the hosting provider and, with the exception of the occasional issue caused by the hosting server being too busy, the site functioned almost unaided. Developing the Moodle site to this point made it much easier for the developer to withdraw from the field of research. However, an exit strategy still needed to be put in place to ease the transition from partial to full ownership of the online environment by ALEC community members. Implementation of the developer’s planned exit strategy began in March 2012.

The first step was to add support documentation into Tutors Only, How To whenever a problem arose. The developer would then refer staff to the support documentation rather than providing an answer by email, to encourage staff to look to How To for their first line of support rather than emailing the developer.

The second step was to encourage staff to try to solve problems either by themselves or with help from other ALEC community members. When members did email the developer, they were asked for specific details on the issue to be solved, to encourage them to clearly describe what they needed.

Annie emailed today to ask for a password for a student. Instead of assuming it is a new user to be enrolled, I have asked her to confirm that it is a new user to be enrolled in her classroom. If I can get them to clearly request what they want then it will be easier for someone else to answer their requests. (Design narrative, 19/3/12)

Rather than giving instructions or immediately solving a problem, the developer replied to emails suggesting to the community member what steps the developer would have taken if she had been trying to solve the issue. The developer also reassured the community member that support would be provided by her if those steps did not work. This was to encourage the staff to undertake finding a solution themselves, and in the process learn how to do it. Another strategy the developer used was to refer people wanting advice, particularly new members who needed some initial support, to the community members with the most expertise in the online practice. Ideally new members would have been supported in their use of the online environment by their lead tutor, however this wasn't possible because Community and Workplace lead tutors were not experienced or confident in the online practice.

The third step was to formalise the handing over of access to the hosting server and passing on of responsibility. At a meeting of the developer and the manager late in May 2012, the decision was made to divide the developer's responsibilities and allocate them to four ALEC community members, who would ideally also understand each other's roles. The actions resulting from this decision were implemented during June and July 2012:

- The ALEC Moodle site was migrated to a new Moodle web address hosted by the same provider and Ken became the contact person for this. Technical 'troubleshooting' also became Ken's responsibility with support from the developer available for the transition. Access to 24/7 technical support was also available through the hosting provider.
- General Moodle administration was completed by Agnes. She continued the administration tasks she had already undertaken, such as adding new tutors to the Moodle site and adding documents, sending out notices, adding calendar events in Tutors Only. Most of the support for her was provided through her preferred method, step-by-step documentation in How To. Further support from the developer was also available for the transition.
- General site oversight and upkeep of the Moodle site became Annie's responsibility. Her role included keeping track of what was happening in the forums to make sure that questions didn't go unanswered, and monitoring any changes to Tutors Only to ensure that they were

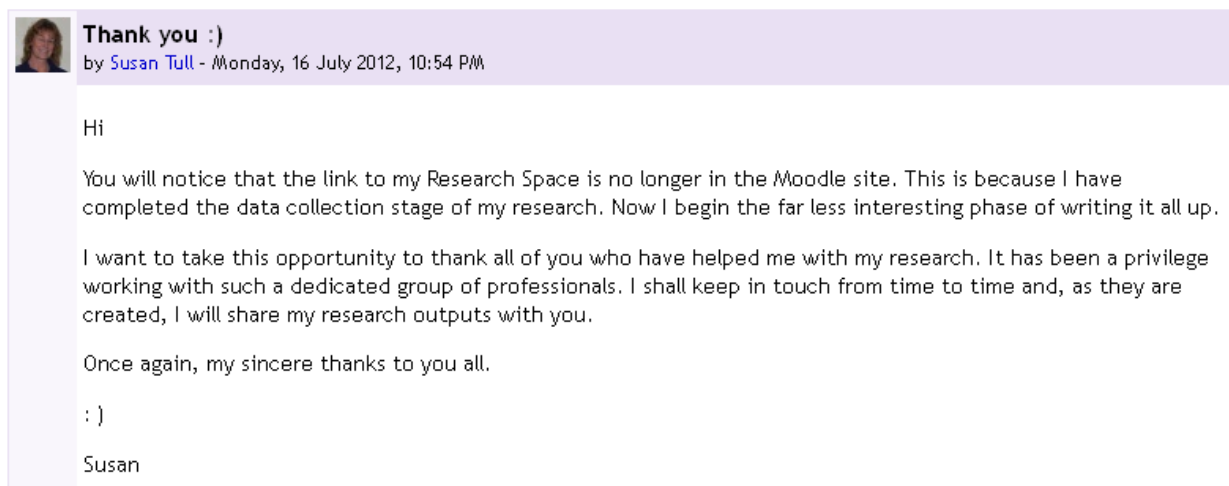
helpful and in line with the online environment's intended use. Annie would also be the person to provide an introduction to the online environment for any new tutors.

- A recently employed Workplace tutor, Bert, was provided with an introduction to the online tools, by the developer, to equip him quickly to support the Workplace and Community tutors if Annie was not available.

These decisions made by the developer and manager were in line with suggestions provided by ALEC community members during the final interviews. These suggestions included; the provision of help documentation, making sure someone would be available to shoulder responsibility for all areas of the online environment, and support provided by the developer for all staff who took on those responsibilities.

During July 2012 the ALEC Moodle site was transferred to a new hosting with the same provider and monitored by the developer until it was performing correctly. The developer then changed all the permissions to enable staff to undertake their new responsibilities. The limited 'ALEC administrator role' was removed and Ken, Madeline, Annie and Agnes were added as full administrators. All the contact details and references to the developer as a support person in both Tutors Only and the demonstration classrooms were deleted. All content which referred to the research, including the Research Space, was removed from the site.

The final step was for the researcher to post a "Thank you" in the News and Notices forum (see Figure 68).



**Figure 68: Final post by developer in the News and Notices forum, July 2012**

This chapter of the thesis concludes the description of the case at the centre of this research. The researcher's focus of activity moved from the ongoing cycles of design and development, to distilling the design principles and theoretical findings of the research, which are detailed in the following chapter.

## Chapter 8 Theoretical findings

Design-based research strives to produce theories and design principles which are sensitive to the context of a study. The intervention implemented through this design-based research could be underpinned by Lave and Wenger's (1991) original theory of legitimate peripheral participation (LPP) as discussed in section 2.2 of this thesis because, as the communities of practice (CoPs) in Lave and Wenger's (1991) studies had, the pre-existing ALEC CoP had developed organically. The organic development of the community continued as it extended into the online environment and online practice to become a blended community of online practice (BCoOP). The analytical viewpoint of LPP provided a means to investigate the process of learning through participation in the practice of this BCoOP which was undertaken by its stakeholders; all the ALEC staff and the developer. Individual community stakeholders' learning was examined through the lens of LPP and viewed in detail using elements of Wenger's (1998b) early communities of practice theory.

Some elements of Wenger's (1998b) theory extended beyond a single CoP and developed a framework of identity within all learning in practice. This theory was not explored, as an in depth analysis of the ALEC community members' full identities would have extended the research in a different direction. Wenger's later works (McDermott, 2000; Wenger, 2004; Wenger & Snyder, 2000) encouraged the cultivation of CoPs as tools for knowledge management in much of the literature in section 2.3. This present study did not view the ALEC community's place in the wider landscape of practice, or the ways in which it interacted with other communities and networks. The focus of this research remained on the analytical perspective provided by theories which consider the professional learning taking place for members within a single community of practice. The theoretical findings of this research both support and extend the theory of LPP within a CoP. This extension is described through the presentation of two instruments, illustrated through examples from the ALEC BCoOP.

The four previous chapters have provided a rich description of one of the first case studies of the evolution of a BCoOP; a community which continues to provide informal professional development for its members to date. Through the findings of this research into how an online environment can support professional development for e-learning, two instruments were developed to support the implementation and investigation of this professional development intervention in the context of a small organisation, such as ALEC. There are two aspects to this professional development intervention. The first aspect was to enable the further development of an existing CoP within an online environment for its everyday practice, thereby encouraging the development of a BCoOP. This took place in the ALEC context as the existing online environment was explored, redesigned and further developed as described in chapter four. The first instrument, developed to support this aspect, was a matrix of strategies to enable a BCoOP to develop. This instrument encompassed the design principles for this intervention. The second aspect of this professional development intervention was to extend the online environment in such a way that LPP was enabled both in areas that are only for practitioners and in the teaching spaces. This was described in the ALEC context in chapter five where the online classrooms were developed and the Colleague role enabled tutors to participate peripherally in each other's practice. The second instrument, a heuristic model to guide the investigation of LPP taking place within the online aspect of a BCoOP, returns LPP to its initial employment as an analytical perspective, and further develops the theory behind this intervention.

This professional development intervention and the two instruments, the matrix of strategies and the heuristic model can be useful to others seeking to provide professional development within an organic community of practice. The matrix could be used by any designer or developer seeking to support a BCoOP. The heuristic model could be of value to designers, developers and researchers in guiding the investigation of the learning taking place. These two instruments are discussed in detail in the following sections of this chapter.

## 8.1 Supporting the development of a blended community of online practice

This chapter begins with the first of the two instruments developed to forward CoP theory through its implementation in the small organisation context of ALEC. To enable a CoP to blend its practice online, an online environment needed to be developed to suit the context of the existing ALEC CoP, and the community members needed to include the online aspect within their practice. The community would then become a blended community of online practice (BCoOP). This research found that there were strategies which were important in enabling and supporting this blending of environments and inclusion of a new practice, and that there were stages of a BCoOP's development during which particular strategies were best implemented.

This section of the chapter discusses some of the literature on the development of CoPs, and literature which contained strategies to support this development. Some of the strategies from the relevant literature, along with strategies which emerged from the findings of this present research, make up the contents of a matrix of strategies which is detailed later in this section of the thesis. The development of the matrix is discussed first, followed by a description of the strategies within the matrix, illustrated through the ALEC context.

As Koch and Fusco (2008) stated, and others before them (Schlager & Fusco, 2003; Barab, Kling, & Gray, 2004; Schwen & Hara, 2004) found, "CoPs cannot be designed, but ... they can be designed for" (p.2). Schwen and Hara's (2003) research observations and review of CoP literature found that none of the fully functioning CoPs in their study had been designed; all had evolved naturally over several years. Johnson (2001) also observed that CoPs take time to grow and that, whether they are physical or virtual, CoPs develop through life cycles of phases. A phased approach to bringing a CoP into an online environment was suggested by Koch and Fusco (2008) who assert that this approach "encourages sustainable growth of the virtual CoP by developing an organization's internal capacity to use the system" (p.21).

Schwen and Hara (2003) found that little was known about the early life cycle of CoPs, but stated that a situated learning theory such as Legitimate Peripheral Participation had more to offer a more mature community. They, along with the designers of Tapped In (Koch & Fusco, 2008) and the Inquiry Learning Forum (Moore & Barab, 2002) suggested that the best opportunity for designing an online environment for a CoP was in working with existing CoPs. Koch and Fusco have suggested a three phased process for bringing an existing CoP online, but the process suggested was strongly managed and the existing CoPs are not organic but modified CoPs, sometimes managed by leaders who were not members of the existing community. The existing CoP which the Inquiry Learning forum (Moore & Barab, 2002) began with was only a community in that the members worked in the

education sector in the same state. Neither of these well-known examples provided strategies for blending an organisation's existing organic CoP into an online environment.

Existing organizational CoPs also bring their own challenges. The influence of a community's pre-existing context on its development in the online environment was emphasised by Smith, Stacey and Ha (2009), who found in their earlier research that "an already existing strongly established community of practice among people who are physically collocated substantially inhibits the movement of that community towards an online environment that will facilitate blended learning" (p.137). In considering the intersection of CoPs and learning communities, they commented that a focus on the transfer of the concept of CoPs into the online environment, and the benefits of doing so, has been lacking in the research literature. "Existing communities can be disrupted or disturbed by their transfer to an online environment so strategies for successfully learning through a blending of these communities are welcomed" (P. Smith, et al., 2009, p.127). The matrix of strategies discussed in this section of the thesis aims to minimise any disruption of the community, and to support a smooth blending of environments. Its development draws on the CoP literature discussed here and in chapter two, as well as on the strategies implemented to overcome the challenges presented by the ALEC context.

### 8.1.1 Developing a matrix of strategies

In supporting and enabling the ALEC community to become a BCoOP, the developer drew on examples and guidelines available in the literature, as well as her own professional experience. The meta-analysis framework in Stuckey's (2004) paper "Making the most of the good advice" was particularly useful as it contained a synthesis of six sets of principles for the development of online communities (Hung & Chen, 2001; Kim, 2000; Le Moulton, 2002; McDermott, 2000; Wenger, et al., 2002; Williams & Cothrel, 2000). The study of the extension of the ALEC CoP into a BCoOP, encouraged the viewing of Stuckey's (2004) framework through the lens of this distributed single organisation's development, and revealed supportive strategies for this context.

As described in chapter three, the data collected during Phase Two meso-cycle one of the research was analysed using a general inductive method. This revealed a focus on the themes of simplicity, relevance and connection as well as the importance of adding value, all of which were discussed in chapter four. The data was re-coded using template analysis. The template included both these grounded themes and the elements of Stuckey's framework. This further analysis highlighted 18 of the 41 elements in Stuckey's framework which had supported the BCoOP development. Eight new strategies were revealed by the analysis and clarified through data from the ALEC context. From Stuckey's framework (2004, pp.6-7) 23 elements, such as 'Concentrate on communities that matter' and 'Open a dialogue between inside and outside', were revealed as not being appropriate for the context of a single organisation such as ALEC, developing into a BCoOP. A further 18 elements were found to be appropriate to this context, but 10 of them, such as 'Facilitate member-run subgroups' and 'Invite different levels of participation', were only appropriate in some way and required modification to better fit this context. The elements of Stuckey's framework which required modification were reconsidered in their original literature and in the light of the findings of this research, and then adjusted to better reflect the ALEC context. An overview of the elements of Stuckey's framework, their exclusion, modification, or inclusion into this matrix can be found in Appendix I.

The strategies highlighted through the literature and this research were synthesized into a matrix of strategies to be considered and applied over time in order to design, implement and sustain the blending of an online aspect into an established community of practice, in a single organisation with a distributed membership. This matrix is framed within the vertical dimension of the developmental stages of the online community environment (Design, Implement and Sustain) and the horizontal dimension of the components which make up a BCoOP (Stakeholders, Engagement and Environment).

The vertical dimension was informed by Stuckey's (2004) meta-analysis which included "waves of influence and action" (p.6) that formed the categories of her framework: design, implement and sustain. These waves aligned with the times when developers sought to design an online environment, implemented it for a community and sustained that community within the environment. The development of the online environment for ALEC also followed these three waves, but in the ALEC context, due to the iterative cycles of the design-based research which took place, they were not strictly chronological. In this context the waves were better described as stages of development. In the matrix of strategies from this present research the vertical dimension consists of these developmental stages of 'Design', 'Implement' and 'Sustain' for the online aspect of a blended community (see Figure 69). The Design stage involved planning and ensuring that all strategies have been considered before the community engages with each phase of the environment development. The Implement stage involved actions to support the community as it engages with the environment. The Sustain stage involved supporting the community to become more mature and self-reliant within the online environment. While these strategies can continue to be used throughout other stages of development, they have been placed into the matrix within the developmental stage in which they were initiated.

The horizontal dimension indicates the component of the BCoOP which is being developed by the strategy. These components were distilled from three sets of dimensions, elements and criteria in the literature (Preece, 2001; Riel & Polin, 2004; Stuckey, 2004). Stuckey's framework used: common ties, people, social interaction, and place or area, from Hillery's research (as cited in Stuckey, 2004) as bands within her categories. Riel and Polin (2004) structured their view through the four dimensions of community: membership, task features and learning goals, participation structures, and mechanisms for further growth and reproduction. Preece (2001), in her sociability and usability framework, offered seven criteria: purpose, people, and policy as the three design criteria for sociability; as well as: dialogue and social support, information design, navigation, and access as the four design criteria for usability. All these dimensions, elements and criteria were further analysed in the light of the strategies which had been implemented in this present research, and the influence on the developing BCoOP at each stage. Three groupings were revealed which encompassed all of the dimensions, elements and criteria under consideration. These groupings were then referred to as the three components of a blended community of practice namely 'Stakeholders', 'Environment', and 'Engagement' (see Table 8). The stakeholders were all the people involved in aspects of the developing BCoOP, the environment was the developing online aspect of the BCoOP, and the engagement was the possible activity within that environment.



**Table 8: Grouping the Dimensions, Elements and Criteria to illustrate the distillation of the horizontal dimension components of the matrix of strategies**

Author and Framework	Dimensions, Elements and Criteria		
Stuckey (2004) - Meta-analysis framework of elements, guidelines and principles relevant to IMCoP development	people	place	common ties, social interaction
Riel and Polin (2004) - Four dimensions of community	membership	participation structures, mechanisms for further growth and reproduction	task features and learning goals
Preece (2001) - Sociability and usability framework for online communities	people	information design, navigation, access	purpose, policy, dialogue and social support
<b>Tull (2013) - Matrix of strategies for blended community development online</b>	<b>Stakeholders</b>	<b>Environment</b>	<b>Engagement</b>

While the Environment, Engagement and Stakeholders components all needed to be considered throughout the development of this blended community, the emphasis of the activity changed during the three stages of Design, Implement and Sustain. The Design stage included conceptualisation, informed exploration, and the design and initial development of the online environment and the activities the stakeholders could engage in. The environment was most important during the Design stage. This stage of community development involved working with the members in designing the online environment itself and establishing how the blended community would work in this additional new space. While the Implement stage embodied further design and development of the community and its online environment, the main emphasis was on encouraging and enabling further engagement by the community members. In the Implement stage, engagement was most important. In the Sustain stage, the emphasis moved to the stakeholders. The weight of responsibility for development also shifted to the stakeholders and the environment was much more in the hands of stakeholders from within the community. The focus of activity was on encouraging the involvement of stakeholders at all levels and in all areas of the community to strengthen the community's ability to develop towards a self-sustainable future. These three areas (in a diagonal highlighted by a deeper colour and larger area in Figure 69) encompass the initiation of the most important strategies to support blended community development.

Design	<ul style="list-style-type: none"> <li>***Fulfil existing community needs</li> <li>***Design with simplicity</li> <li>***Ensure appropriate IT infrastructure &amp; support are in place</li> <li>** Situate the community in the practice</li> <li>* Create forums for thinking together as well as systems for sharing information and resources</li> <li>* Design for evolution (flexible, extensible)</li> </ul>		<ul style="list-style-type: none"> <li>** Enable the development of relations</li> <li>** Integrate the existing rituals of community life</li> <li>* Combine familiarity and excitement</li> </ul>	<ul style="list-style-type: none"> <li>* Collect and use feedback from members</li> <li>* Design for a range of roles</li> </ul>
	Environment	Engagement		Stakeholders
Implement	<ul style="list-style-type: none"> <li>***Be open to community input</li> <li>** Develop both whole community and small group spaces</li> <li>* Fit the tools to the community</li> </ul>	<ul style="list-style-type: none"> <li>***Support shared practice through communication and community awareness</li> <li>***Keep it relevant to the professional practice</li> <li>** Provide the means for collaboration to take place</li> <li>** Highlight the value added</li> <li>** Create appropriate new rituals</li> <li>** Allow different levels of participation</li> <li>* Make it easy to contribute</li> </ul>		<ul style="list-style-type: none"> <li>* Make sure people have time and encouragement to participate</li> <li>* Acknowledge the voluntary nature of participation</li> </ul>
	Environment	Engagement		Stakeholders
Sustain	<ul style="list-style-type: none"> <li>***Maintain flexibility of design</li> </ul>	<ul style="list-style-type: none"> <li>* Encourage appropriate etiquette</li> </ul>	<ul style="list-style-type: none"> <li>*** Enable community members to share their online practice</li> <li>** Enable members to run subgroups</li> <li>** Support an active passionate core group</li> </ul>	
	Environment	Engagement	Stakeholders	

Figure 69: Instrument 1: A matrix of strategies for enabling and supporting the development of a blended community of online practice (BCoOP). The vertical dimension indicates the stage during which the strategy is initiated; the horizontal dimension indicates the component which is being developed by the strategy. This matrix is relevant to single organisations with distributed membership

Note: The focus areas of the matrix, where the most important strategies are implemented, are highlighted by the deeper colour and larger cell size

- \* Strategies from Stuckey's (2004) meta-analysis framework
- \*\* Strategies modified from those in Stuckey's (2004) meta-analysis framework
- \*\*\* Strategies arising from the ALEC blended community of online practice study

In the following sub sections the strategies for each of the components and the stages in the matrix will be discussed, beginning with any original strategies in that area then discussing strategies adopted from the literature. Each strategy's application in the ALEC context will be discussed, as well as its relevance to the theory and literature.

## 8.1.2 The Environment

Creating an environment which could, as part of a BCoOP, become an integral part of the tutors' daily administration and lesson preparation brought the tutors one step closer to incorporating the use of the online environment into their teaching practice. In this context the medium was the practice. The tools and affordances of the online environment, made available within Tutors Only, were some of the tools which the tutors would have available to them to implement e-learning for their clients. Strategies were undertaken to develop an online environment which would enrich the community and be welcomed as an extension of their present practice. The strategies for the Environment component received the most emphasis during the Design stage, and the majority of the original strategies from this research were in this area. The Environment strategies are described, with illustrations from the ALEC context, within the three stages of blended community development: Design, Implement and Sustain.

### 8.1.2.1 Design stage – Environment component

#### **Fulfil existing community needs**

The affordances of the environment and the tools within it to fulfil existing community needs gave the online community space a relevance to the community members' practice that was valued. By meeting the tutors' immediate needs, through this original strategy in the matrix, the online environment became an important addition to the community. For ALEC, as a community with distributed membership, the need to provide easy access to resources and to communicate efficiently with its members, was paramount. The organisation's administration documents and electronic teaching resources could be downloaded from Tutors Only, Resources. By becoming the repository for all digital resources, the online environment quite quickly became a space that very few of the tutors could manage without. Communication was facilitated through three forums each with a different purpose: one to distribute notifications, a second to enable professional discussion, and a third which allowed social interaction to take place. By providing a central point for communication within the community, the online environment also became a supportive part of daily practice. Other BCoOPs are likely to find similar benefits.

#### **Design with simplicity**

Using this original matrix strategy to design with simplicity the developer combined ALEC community suggestions and Le Moul't's (2002) good advice to "keep it simple, start with easy structures and easy tools" to create a user friendly environment. Throughout the development of the environment, the one request constantly made by participants was for simplicity. Lack of computer confidence and little previous use of online spaces created an initial barrier to using the online environment for some tutors. While the Moodle software provided tools that were easy to work with, the environment was first established with only links and forums. New tools, such as wikis, were only introduced when functionality requested by community members could not be facilitated by the tools already in use, and they would clearly benefit the community. Simple navigation was needed to

enable the steady growth of confidence and a sense of ease in using the environment. Navigation was consistent in all areas and kept to the minimum required to access all areas of Tutors Only in one or two clicks. The content and activities within the community space were presented within a small number of clearly labelled areas. Feedback from community members on both the initial design and further development of the environment indicated that the decision to design with simplicity was highly valued and should remain a priority.

By building with simplicity the site was less threatening, and was seen as user-friendly by the participants. A further reason for designing with simplicity was to create an example of good practice in developing the type of environment which tutors could create for their clients. For adult literacy clients the environment would need to be kept simple, so modelling this was important. Simplicity in the ALEC environment extended, beyond the navigation of the site, into the support documentation, which further enabled ease of use.

### **Ensure appropriate IT infrastructure and support are in place**

Ensuring appropriate IT infrastructure is in place is vital in designing for community development online. Giving rise to this original strategy in the matrix, the most often stated reason for community members not engaging with the online environment was the lack of either computer equipment or internet access. Some Workplace and Community locations did not provide internet access, while others had no access to computers. During this study there were some unusual circumstances due to the major earthquakes of 2010/2011. This resulted in many venues which had previously been supplied with the appropriate IT infrastructure, including their homes, no longer being available to the tutors. Whether the lack was experienced in their teaching spaces or in their homes, the result was the same; if members did not have access to computers or the internet they could not access the online community environment or participate within it. Tutors, like those who worked At-Base, and had ready access to the appropriate technologies both during and after work hours, were able to make much more use of the online environment than those whose access was limited. This lack of IT infrastructure was the second largest reason for tutors not taking up the opportunity to create online classrooms for their clients.

Support to enable members to participate within an online environment also is essential. Le Moulton (2002) lists "No support" as one of the classic pitfalls to be aware of, and explains that there is a need for "constant support and trainings - especially for the key members" (classic pitfall #8). Schlager, Fusco and Schank (2002) also pointed out, that community members "... must understand and be proficient with online technology before they can engage in productive activities online" (p.153). Support can be provided in diverse forms and, as Sahin and Thompson (2007) found, there is a need for high quality resources which facilitate self-directed learning. Taking this one step further, Schlager and Fusco (2003) suggest that supportive environments should "enable any member of the community to have the technical capabilities and social support required to take on leadership roles in a given context" (p.144). Face to face training sessions in the early years of Riverin and Stacey's (2008) study supported members in two ways. It supplied them with the technological knowledge to help them overcome any challenges, and the sessions helped to develop supportive collegial bonds which enabled members to cope more easily. The development of the ALEC blended community also began with face to face support. Documentation to support self-directed learning was already

available in the site at that time, and new support documentation was created as the community developed further in its use of the online environment.

### **Situate the community in the practice**

The dimension of the 'situatedness' of a community was identified by Hung and Chen (2001) as being fostered by "contextualized activities, e.g. tasks and projects based on demand and needs" (p.10). The activities taken up by the tutors were strongly focussed on their practice, and individual tutors often spoke of having very little time for anything which they saw as not being relevant to that. For the tutors to see the online aspect of the blended community as being relevant and worthwhile, the situatedness needed to take place around their professional practice. The ALEC management planned to encourage the members of this community to broaden their practice to include blended learning for their clients, where it was appropriate. Situating the community in the online practice was the most important strategy in designing for ALEC's development into a blended community of online practice. In the online aspect of this blended community, the medium was part of the practice. The development of the ALEC BCoOP was to facilitate professional development in e-learning for the tutors. Developing the online community environment using a Moodle software platform situated the community in an e-learning environment, which provided the opportunity for situated learning. The tutors were able to become familiar with possible new teaching tools, and this encouraged the uptake of new skills, furthering their professional learning. It allowed tutors to participate peripherally in the online practice of others and, as the online environment expanded to include teaching spaces, progress toward mastery of community's online practice.

### **Create forums for thinking together as well as systems for sharing information and resources**

While the Moodle site data indicated that the availability of resources online, such as worksheets and assessments, brought more tutors into the online environment than any other activity, the ALEC online environment was built to provide more than just shared resources. Creating forums for thinking together as well as systems for sharing information (McDermott, 2000) and resources, provided conditions within the online environment that enabled growth in collaboration within the community. Koch and Fusco (2008) point out the importance of providing a space for the collegial sharing of wisdom by community leaders and McDermott (2000) suggests that "live contact is the key to building a sense of commonality, enthusiasm and trust" (pp.23-24) and that this contact provides opportunities to think together. As opportunities for 'live' contact between ALEC community members were limited, the provision of forums for thinking within the online environment increased the opportunities for community members to engage with each other at any time.

### **Design for evolution (flexible, extensible)**

To provide for the potential growth and change as the community developed online, both flexibility and the ability to extend needed to be incorporated in the design of the online environment. According to Stuckey and Barab (2007), a flexible initial design which allows for the community to have input into the way in which the environment grows and develops, and makes the most of opportunities to do so, has more chance of success. The advantage of having designed the environment for the ALEC community to be both flexible and extensible became apparent when a collaborative space was needed for a group of tutors to develop teaching resources. The design allowed extension of the online environment to easily provide a new space with tools for sharing

and collaboration. The ability to change member's roles and add them to a group of members with particular permissions also proved helpful, and was due to the choice of a flexible environment. If tutors had needed to find a space outside the environment for any of these circumstances then the sufficiency of the design of the environment for blending the CoP could have been challenged.

### 8.1.2.2 Implement stage – Environment component

#### **Be open to community input**

A community and the environment in which it develops can support the work processes of its members, uphold their intentions (Schwen & Hara, 2003) and be supported by management and administration (Riverin & Stacey, 2008). A community created out of necessity whose members are motivated to have a say in shaping the community, according to Le Mout (2002), is more likely to be successful. Baek and Schwen (2006) too felt that 'participant voices' were required to build a communication space and the structures to support social interactions. Implementing an online environment that suited the ALEC community was made possible through the original matrix strategy of being open to input from the community members themselves. Stakeholder input in the design stage helped to create a site which fulfilled the community's initial expectations. Through email contact, face to face discussions, and interviews the community members were able to communicate their suggestions for improvement and future development of the environment, as well as any current needs which the online environment might be able to fulfil. The environment and the tools allowed members to input unsolicited ideas for change through the online forums, and in some cases make changes themselves. Many of these stakeholder suggestions were implemented, helping to reinforce the sense of ownership of this online environment by the tutors.

#### **Develop both whole community and small group spaces**

For communities which extend beyond one organisation, Wenger, McDermott and Snyder (2002) suggested that it was worthwhile to have both public and private spaces. Schlager and Fusco (2003) described a need for the formation of collaborative groups for particular tasks and the facility for the group to share their results with the wider community. Within those more private community spaces, a site can enable members to build a sense of trust (Baek & Schwen, 2006). As well as spaces for the whole community, it was important for the ALEC blended community to have spaces which could be used by sub-groups of tutors. The creation of a working space for the Writers' group, a private space for the lead tutors, a sharing space for all the tutors of one nationwide client, and a space for the researcher to communicate with just the research participants, all made the site more useful for the members of the community because it then served a wider range of purposes.

#### **Fit the tools to the community**

Appropriate tools and technologies for an online environment are those which fit the practices of the community using it. The strategy of fitting the tools to the community online can support both individual practice and the work of groups. Schlager and Fusco (2003) believed that "resolving the question of what is the practice that our technologies are being designed to support is not simply an academic exercise but rather a necessary design inquiry" (p.146). By using tools and technologies that are a good fit, the community is better able to continue in a newly developed environment. Williams and Cothrel (2000) point out that even though sophisticated forum discussion tools may be available, a simple email discussion list might sometimes be more appropriate. The ALEC community



was familiar with the use of email, so the tool to 'push' forum posts to members via email was used to help make members aware of the use of relevant discussion forum tools.

The themes of simplicity and relevance evident within the research data also highlighted the importance of choosing fitting tools for the community. The ability to add members in the uncomplicated Moodle role of 'students' enabled the operational tools to be used in a simple way, and for more functionality to be added when it fitted with the tutors' needs. If the tools provided had been too complex, or introduced too early, tutors may have given up on an environment which seemed too difficult for them to use. Tutors were most interested in tools which fitted their needs - no more, no less. The benefit of choosing a Moodle site as the platform for this community environment was having the array of tools that could be implemented for and by the community. The familiarity with these Moodle tools engendered by their use within Tutors Only and other community spaces was, in time, extended to the use of Moodle for e-learning for their clients.

### 8.1.2.3 Sustain stage – Environment component

#### **Maintain flexibility of design**

Maintaining the flexible design of an online environment supports an evolving community. This original strategy in the matrix enabled the provision of an appropriate space for a blended community to grow, change and mature. Le Mout (2002) maintained that, while online communities do need familiar points of reference, lack of scope for future development can cause them to fail. To prevent the environment from restricting the community's development online it needed to be flexible to keep pace with the ongoing development of the community it supported. In the Inquiry Learning Forum, Moore and Barab (2002) moved on to address "more fully supporting online discussions [and] creating collaborative workspaces" (p.47) at a later stage in their community's development. For Riel and Polin (2004) the community tasks of the "design and experimentation with new practices to solve evolving community challenges [and] development of tasks, tools, or roles in the practice arising in response to internal and external changes" (p. 27) required a design flexible enough to accommodate these activities. In the provision of a more flexible environment Schlager and Fusco (2003) saw a need for members "to have a set of online learning and collaboration capabilities that they can own and tailor to meet their own needs and the needs of the community" (p.139). This potential was available within the online environment collaboratively designed for the ALEC BCoOP. In the Sustain stage of community development it enabled the community members to maintain and further develop the environment themselves.

### 8.1.3 The Engagement

Engagement of the ALEC community members within the online environment encouraged the development of the blended community. The strategies in this component of the matrix supported the tutors' engagement in shared practice, collaboration and communication. The Engagement strategies are described, with illustrations from the ALEC context, within the three stages of blended community development: Design, Implement and Sustain. While these strategies began in the Design stage and continued through to the Sustain stage, they became the emphasis of activity in the Implement stage.



### 8.1.3.1 Design stage - Engagement component

#### **Enable the development of relations**

A community works well when the members of that community build relationships and depend upon each other. Interdependency can be fostered by variations in levels of expertise, needs or opinions as well as by mutual benefits and complementary motives (Hung & Chen, 2001). Yet to develop interdependency and relationships, we must first establish connections between the members. The ALEC community's engagement opportunities were designed to enable members to connect with one another. The ability to develop connections with other tutors was one of the initial advantages. With the members spread over different teaching focusses as well as different workplaces and work hours the opportunity to develop connections had been limited to meetings of their team, PD days, and the occasional social gathering. What the community had lacked as a physical entity was cohesion, and the engagement within the online environment provided opportunities for members to develop relations and build cohesion and trust.

#### **Integrate the existing rituals of community life**

In designing to engage community members in their online environment the existing rituals of community life were not abandoned, but integrated into the new environment. Transferring these existing rituals into the online environment initially drew the community members online. Koch and Fusco (2008) advise that beginning to use an online environment for a community "involves translating activities regularly conducted face-to-face into a form that works well online and serves a purpose" (p.10). In designing for a community, Riel and Polin (2004) similarly recommend that practices which in the past had been most effective for the face to face community, should be preserved and reproduced in the online community environment. The ALEC weekly newsletters continued to be produced, but they were made available online rather than being emailed or printed. The organisation's upcoming events were displayed in the Tutors Only calendar as well as in the physical office. As Kim (2000) asserts, "all communities use rituals to acknowledge the members and celebrate important social transitions. By celebrating holidays, marking seasonal changes, and acknowledging personal transitions and rites of passage, you will be laying the foundation for a true online culture" (p. xiv). The 'Brag Book' space was created on the Tutors Only Main Page, to engage members in celebrating and sharing significant events in the life of the community, their fellow members and clients.

#### **Combine familiarity and excitement**

Wenger (2002) asserted that "lively communities combine both familiar and exciting events so community members can develop the relationships they need to be well connected as well as generate the excitement they need to be fully engaged" (p.62). There was very little about the new online environment which could be considered familiar, so initially it was difficult to use the strategy of combining familiarity with excitement. For some tutors the idea of engaging online was more daunting than exciting. Retaining the existing rituals helped, and having the forum posts disseminated through the familiar email environment gave the members the option to engage passively in community activity, and grow familiar with the environment and the idea of an online community at their own pace. Initial excitement about using the ALEC online environment helped community engagement to grow quite steeply through the first four months of its development, before the interruption of several major earthquakes and the summer holidays. Familiarity with the

environment and the new way of engaging with members of the community grew, and was maintained throughout this difficult period when no one needed any extra excitement in their lives, and connections within the community continued to develop.

The ALEC community was strongly influenced by the familiar rhythm of the academic year and routine events. The Tutors Only meeting wikis enabled members to engage with planning for the regular meetings. The calendar within the online environment gave members a visual reminder of the rhythm of the community's monthly routine of meetings and timesheets, as well as the cyclic events of teaching terms and reporting. Wenger et al (2002) assert out that "routine activities provide the stability for relationship-building connections; exciting events provide a sense of common adventure" (p.62). Aside from the earthquakes, the most exciting community events were the PD days, when the whole community met to work on a specific area of professional development. The lead up to these events generated a significant amount of engagement in Tutors Only. This continued after the event, as resources and information from the day were shared throughout the community.

### 8.1.3.2 Implement stage - Engagement component

#### **Support shared practice through communication and community awareness**

Supporting shared practice through communication and community awareness was an original matrix strategy for both the whole community and the small groups. The open access adopted throughout Tutors Only, and between tutors who were developing online classrooms, allowed members to learn more about others in the community and raised awareness of the online practice members were engaging in. This is similar to the community members in Gray's (2004) study where she found that "for many Newbies their initial participation was peripheral, staying on the edges and lurking while learning through their online experience"(p.27). The whole ALEC community received automatically emailed copies of forum posts which were used to elicit information, and to begin discussions and other practice related activities within the community. The receipt of responses from other members raised the awareness of those who were not already actively participating online to some of the practice taking place in Tutors Only, and enabled them to learn more about other members in the community. One member explained that accessing the online community "just puts your finger on the pulse really, of what's going on" (Tina, Phase One interview).

After the initial excitement of having an online environment, the growth of engagement in the online aspect of the ALEC community slowed. As one tutor commented, "I think a lot of tutors are not using this a lot yet... and once they are ... there'll be more reason to go on" (Ken, Phase One interview). While the community was growing and establishing itself online, increasing community members' awareness of what was happening within Tutors Only and the Working Group spaces, and highlighting the positive changes through the available channels of communication, encouraged members who had remained peripheral to begin to engage. As Schlager, Fusco and Schank (2002) pointed out, "staff can quickly learn to plan and engage in online activities through peripheral participation in the activities of more experienced members of a CoP" (p. 153).

### **Keep it relevant to the professional practice**

The integrity and value of the online community aspect was maintained by the original matrix strategy of keeping the environment and the engagement relevant to the professional practice of the members. Effective learning takes place through activities which are authentic and directly related to the members' professional practice (Riel & Polin, 2004; Vrasidas & Zembylas, 2004). Community members become more deeply involved if opportunities exist for them to participate in authentic practice based tasks (Riel & Polin, 2004). It was clearly evident from the research data that the ALEC tutors had very little time or interest in online engagement that was not related to their professional practice. Frequent use of the Staffroom forum for sharing humorous items early in the BCoOP's development discouraged some members from seeing the online environment as professionally useful. Comments such as "I see this as a little bit like facebook. I don't know if I really have time" (Ken, Phase One interview) showed the tutors' reluctance to move into anything that was seen as social media. Initial social content had helped to develop relations between members, and they took an interest in social content when something unusual happened, but there was far more activity and engagement around online activities which were directly relevant to their reason for being a community member, which was their practice. The practice of the blended community needed to be kept in the foreground as the community grew and changed. Discussion topics developed beyond the day to day processes of the community. The engagement generated within the community environment both before and after professional development days is a good example of this more mature engagement.

### **Provide the means for collaboration to take place**

Williams and Cothrel (2000) stated that a community should provide the materials for collaboration, but for the ALEC community it was more important to provide the means for collaboration to take place. As distributed members of a physical community it had been difficult to coordinate times to collaborate. Working via email had also met with difficulties such as the inability to send large files, and the need to keep track of which version of collaboratively produced work was the most current. The online environment could enable the small group collaboration in which members of the ALEC community wanted to engage. As well as forums for discussion, the functionality of the Moodle platform provided tools for collaborating, such as file sharing and wikis, and enabled the creation of small group spaces in which the collaboration could take place. Within Tutors Only, the provision of forums led to members sharing their own resources, links to web content and activities, teaching strategies, and ideas in Resources, as well as sharing personal experiences in the Staffroom forum. For collaborative engagement, such as the Writers group and the group of *Nationwide* tutors, the online environment provided the means to collaborate, and the tutors were encouraged by being able to engage in collaboration across several areas of community life.

### **Highlight the value added**

The value of access online to both stored resources and member support was easily identified as beneficial by ALEC community members. Other benefits of a blended community of online practice were of more indirect value. Wenger (2002) asserted that "a key element of designing for value is to encourage community members to be explicit about the value of the community throughout its lifetime" (p.60). Choosing to highlight the value added through member engagement within the community was a strategy to encourage further engagement. For the ALEC community member value which was less easily identified included: improvement in related skills such as computing

skills, organisational skills, and communications methods; an increase in opportunities for collaboration; and, possibly most valuable, the potential flow on benefits for their clients. Communication of this added value to other community members most often took place informally and usually in face to face settings such as team meetings. The benefits were acknowledged obliquely within some of the posts from the ALEC manager. Interview data indicated that listening during meetings to the shared experiences of the growing value of this online practice for the tutors and their clients, encouraged other tutors to want to become more involved in the online practice and possibly have their own online classrooms.

### **Create appropriate new rituals**

Some existing community rituals had been integrated into the initial design of the ALEC online environment. In the Implementation stage it was possible to add further value by creating appropriate new rituals. Two new rituals were established in the ALEC BCoOP at this time. The first was that agendas for the regular team meetings were made available online and community members could add items to their agenda. All team members were then able to see the most up-to-date version of the agenda before the meeting took place. The second ritual was all news being communicated through immediate postings in the 'News and Notices' forum, which meant that community news no longer took the form of a weekly paper-based newsletter. Both of these new rituals helped to establish the engagement of the community in the online environment.

### **Allow different levels of participation**

Online engagement for the ALEC BCoOP took place through contributions and collaboration, but not all members of the ALEC community participated equally in this online environment. The strategy to allow different levels of participation gave members the choice to participate at a level where they felt comfortable. The members' individual levels of participation varied during the blended community's development. Often this level of participation depended on the perceived value of a particular activity to the members, and the time they had available to participate. Preece, Nonnecke and Andrews (2004) concluded that in many online communities 'lurking' is the 'norm' and only a few members post regularly. Lurking becomes a threat when too many members choose to lurk rather than actively post messages (Riverin & Stacey, 2008). Activity within the ALEC online community closely aligned with the levels of participation found by Wenger et al. (2002) who reported that they would "commonly see three main levels of community participation... a small core group of people who actively participate (10-15%) ... the active group (15-20%) ...[and a] large portion of community members are peripheral and rarely participate" (pp.55-56). Analysis of site activity logs revealed that the relatively small ALEC community of seventeen members during the Implement stage, provided similar percentages of 17% core group, 23% active group, and 60% peripheral group, with some members moving between the active and peripheral group.

### **Make it easy to contribute**

Another strategy which encouraged members to engage within the online environment was to make it easy to contribute. Many other tasks called for members' attention and they were less likely to contribute to the community or take part in collaboration if it was difficult to do so. As McDermott (2000) explained, "ease of use is more about how the software integrates with people's daily work, the knowledge they need to share, the way they think about their community's domain and how they move about in it, than with specific features of the software itself" (p.24). In the ALEC online

environment the ease of contribution was made possible in Tutors Only through the small number of forums with their clearly labelled purposes, and the instructions provided. The addition of a forum in Resources specifically for tutors to upload and share resources, also enabled them to contribute through the use of the simple tool they had become accustomed to, rather than needing to learn how to use the more complex tools which could have been made available.

### 8.1.3.3 Sustain stage - Engagement component

#### **Encourage appropriate etiquette**

In the longer term setting an expected standard of behaviour is beneficial to the ongoing health of a blended community. Initially members may be cautious in their contributions and communication with other members, but familiarity may lead to a change in behaviour. What was acceptable face to face was not always as easily accepted in the online environment. Two examples of this in the ALEC context were 'yelling' at people through the use of the upper case, and a forum post with inaccurate information, which was written in an accusatory tone. In a face to face situation 'yelling' would not be acceptable, and the accusatory comment may have been corrected and then forgotten. In the online environment, even though these were responded to, they remained visible to the community reminding them of the situations which initiated them. Kim (2000) suggests that implementing ground rules for community participation can help members to recognise and maintain appropriate etiquette. While the ALEC blended community did not develop a formal etiquette statement, members who had behaved less appropriately were made aware of it by other members. Their behaviour was then amended in ways such as requesting that the inappropriate posts were removed, and no longer 'yelling' in forum posts.

## 8.1.4 The Stakeholders

In the ALEC BCoOP context the stakeholders were all the ALEC staff and the developer. While Stakeholder strategies began in the Design stage, it is in the Sustain stage that they become the emphasis of activity. In this area the strategies strengthened the community's ability to develop towards a self-sustainable future. The Stakeholders strategies are described, with illustrations from the ALEC context, within the three stages of blended community development: Design, Implement and Sustain.

### 8.1.4.1 Design stage – Stakeholders component

#### **Collect and use feedback from members**

Gathering feedback from members and making use of it was fundamental to establishing and maintaining this BCoOP. Williams and Cotherell (2000) described a community they studied as "a perpetual work in progress" (p.82) with changes to the online environment being driven by members. The ALEC online environment could also be described in this way. Gathering feedback from key people in the community provided ideas on designing for and supporting the BCoOP and its members. The strategy to collect and use feedback from members enabled them to feel that the ALEC online environment was truly their own, and to take some ownership of the environment that had been created with them, and for them. Engaging in design-based research ensured that the development of the ALEC online environment was a collaborative process, through the micro-cycles of Analysis / Exploration, Design / Construction and Evaluation / Reflection which included user

feedback. The tools used within the Moodle site, from the Exploration phase onwards, provided opportunities for members to input unsolicited ideas for change, and to begin to make changes to the online environment for themselves.

### **Design for a range of roles**

Recognition of the range of roles undertaken by the stakeholders of a community can be designed into an online community environment. Kim (2000) explained that, as a community grows “it will become increasingly important to provide guidance to newcomers while offering leadership [and] ownership ... opportunities to more experienced members” (p.xiii). The majority of the ALEC BCoOP members engaged initially in a role which allowed them to participate in the online environment without taking any responsibility for it. Some initial roles were specifically designed for members within the ALEC blended community. These roles included an administrator, a resource librarian and a person with responsibility for national assessment standards. These roles pre-dated the online environment and required permissions which enabled them to use the more complex Moodle tools to perform their roles within the online environment. Roles which involved member support and oversight of the environment were initially undertaken by the developer. In later stages community members fulfilled these roles, making it possible for the ALEC online environment to become self-sustained as the developer withdrew from active participation.

### **8.1.4.2 Implement stage – Stakeholders component**

#### **Make sure people have time and encouragement to participate**

One vital strategy in the Implement stage which continues to be of importance in the Sustain stage of supporting the development of a BCoOP was to ensure that people had time and encouragement to participate. McDermott (2000) maintains that “one of the great limiting factors of a community’s effectiveness at sharing knowledge is the time people have to participate” (p.22). One of the chief barriers for participants in Riverin and Stacey’s (2008) research was time. “Whether it was lack of time to access the forums and to become involved in online projects, or simply to post resources and connect to others, time was an issue” (p.53). Lack of time was the second most frequent reason given by stakeholders for not participating in the online environment. ALEC tutors with specific roles in the organisation, such as resource librarian and the person with responsibility for national assessment standards, were provided with a time allowance to engage in their roles, some which had changed to take place within the online environment. Members without specific roles needed to allocate time from within their usual teaching preparation time. For these community members “community participation, even when very valuable, can easily be surpassed by more pressing tasks” (McDermott, 2000, p.22). Cuthell (2005) makes the point that “participating in an online community requires time. Given all of the demands made of educators, participation in online communities should not be seen as another imposition, another task to be completed at the end of an overstretched day” (p.329). Putting strategies in place to provide time for members to participate in the community as contributors and/or leaders is an important step in supporting stakeholders.

#### **Acknowledge the voluntary nature of participation**

Where participation within a community takes place within the stakeholder’s discretionary time, community members need to be acknowledged and valued as volunteers (Williams & Cothrel, 2000). Both their time and their effort should be recognised as a contribution above and beyond that of an

employee. This acknowledgement took place in small ways within ALEC, such as acknowledgement and thanks for contributions, and making decisions based on the responses of those who engaged in online discussion. How a community chooses to acknowledge and support this volunteer behaviour may vary, but in working with community members the voluntary nature of their participation should always be a consideration.

#### 8.1.4.3 Sustain stage – Stakeholders component

##### **Enable members to run subgroups**

Enabling members to run subgroups provides them with further opportunities to increase their skills in the online environment. ALEC members who shouldered responsibility in running subgroups were eventually able to take on other responsibilities within the community. Those who grew in confidence in the online environment developed skills which could be transferred to teaching within the same environment. ALEC Workplace tutors, for example, asked for an online space for all the tutors of one nationwide client. The tutors knew that this was possible within the ALEC online environment because they had been involved in a similar group space in the Working groups category. The tutors used the *Nationwide* space to collaborate, not just with each other, but with other tutors in other organisations nationwide. These ALEC tutors, most of whom lacked the IT infrastructure in their teaching spaces to implement online classrooms for their clients, were able to develop their online practice in this group space, and to share that practice with others.

##### **Support an active passionate core group**

An active, passionate core group of members can be the best resource for any community. As McDermott (2000) explains, “active core group members not only contribute but often feel responsible to help develop the community by inviting or easing participation of people they know” (p.24). These are the members who are most likely to populate the environment with relevant content as well as generate enthusiasm and engagement. When members who are passionate about the community get involved, others who may have remained on the periphery can be more easily engaged in community activity.

Supporting an active passionate core group strengthens an online community in the Sustain stage. In the ALEC community the core members, those who were most active in participating during the Implement stage, continued to be active members in the Sustain stage. These more enthusiastic members began to provide examples of more mature online practice and leadership from within the community. Riel and Polin (2004) saw leadership as being identified through the roles which members, such as those in this more active group, took on within the community. Schlager and Fusco (2003) stated that “community leadership may intersect with, but is not synonymous with, an organization’s formal management structure” (p.143). They also saw community leadership as evidenced in many forms, not just those with formal recognition, or those who led in all areas of the community. This broad concept of leadership encompassed many activities such as modelling, encouraging, supporting and contributing, all of which the more passionate members of the ALEC blended community engage in.

Supporting this active core group sustained the enthusiasm of the BCoOP within the online environment. Initially in the ALEC context, the developer, as the expert in online practice, had



provided advice to community members on the skills or understandings of online practice, because they did not yet exist within the community's membership. In the Sustain stage this strategy involved actions such as providing standalone support materials for this active core group, which enabled all community members to learn independently how to use the tools of the online environment. This support for more mature members facilitated their active engagement and the development of their professional understanding of the online environment.

### **Enable community members to share their online practice**

Opportunities to share teaching practice can be as limited in an online environment as they sometimes are face to face. The original matrix strategy of enabling members to share their practice online provided an ongoing source of professional development for community members. In their study of the Learning Inquiry Forum, Barab, MaKinster and Scheckler's (2003a) goal was "to understand the design principles for fostering, sustaining and scaling a community of practice in which the value of sharing one's practice, outweighs the cost of participation" (p.239). This balance of value and cost is a key for any community, and possibly the most important point for many community members in their decision to participate. Examples of online practice within the ALEC BCoOP could have been shared during face to face meetings, but meetings which included all stakeholders seldom took place. Enabling the easy sharing of online practice within the online environment helped to weight the balance in favour of shared practice. This strategy supported opportunities for tutors to become aware of the online practice of other tutors, to see online practice in action within their own context, and to consider extending their own practice. The ALEC online environment was developed in such a way that it enabled the community members to engage in shared practice through viewing other members' site contributions and forum participation within Tutors Only and Working Group spaces; and, for tutors who had online classrooms, to observe the online classrooms of other tutors.

Following discussions with management and other community members, responsibility for the ALEC online community aspect was distributed amongst five members of the active core group as the researcher withdrew from these responsibilities. In this way examples of online practice could be developed across all teams. Members from all areas of the community could be encouraged in their present online practice and inspired to further develop their online practice in the future, and the online environment could be sustained by the community itself.

The matrix of strategies detailed in this section enabled the ALEC BCoOP to become self-sustained, with the online environment supporting professional development for e-learning for the members of this community. This instrument could support other designers and developers by detailing successful strategies and the most appropriate stage of a blended community's development in which to initiate them. A second instrument, a heuristic model, was developed from this study to guide the investigation of legitimate peripheral participation (LPP) taking place within the online aspect of a BCoOP, enabling reflection on the intervention which had been put in place. This heuristic model is described in the following section of the thesis.

## 8.2 Legitimate Peripheral Participation within the ALEC online environment

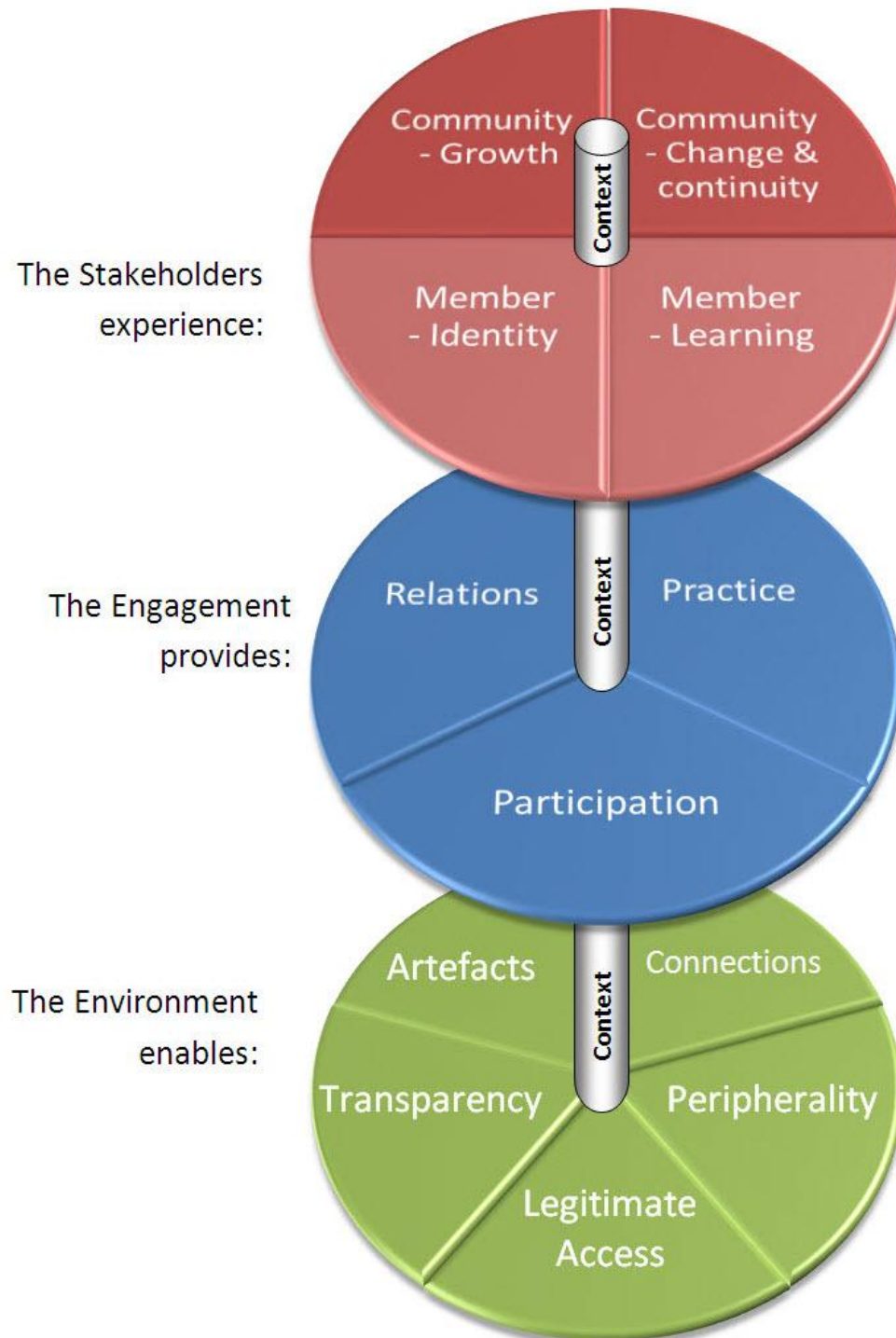
In this second section of chapter eight the theoretical findings of the latter stage of the research are discussed and illustrated, through the application of a heuristic model. As well as describing the learning which took place, this section of the thesis demonstrates the use of the model as a way of harnessing the analytical viewpoint of legitimate peripheral participation (LPP) to enable investigation of a BCoOP, and reflection on the intervention. Wenger (1998b) describes a theoretical perspective as a “guide about what to pay attention to” (p.9). Similarly the heuristic of this model focusses on what to expect to see in LPP taking place in BCoOP, and conversely what might be missing and thereby threaten the sustainability of the community and the learning of its members.

Legitimate peripheral participation (LPP), as discussed in detail through the literature reviewed in section 2.2, is the theoretical basis of a heuristic model developed to more clearly describe the learning that took place in this online environment. LPP involves individual stakeholders learning as their identities develop through engagement in their community’s practice. Newcomers to a practice begin by having legitimate access as a member of the community, and learn through their participation in the practice along with other members of the community. This participation begins as peripheral then, as the newcomer’s practice becomes more adept, gradually develops to become full participation in the practice of the community. Learning within a community of practice is seen as movement along a learning trajectory, through the learning curriculum provided by the practice taking place within the community which the member has access to. Learning trajectories do not all lead to full participation. A range of trajectories suggested by Wenger (1998b) is investigated through this model: peripheral, inbound, insider, outbound and marginal.

In considering this theory from the early literature on communities of practice (Lave & Wenger, 1991; Wenger, 1998b), Lea (2005) suggests, and the author concurs, that “as a heuristic the concept enables exploration of the ways in which learning does or does not take place and foregrounds not just the successes but constraints on learning and on full participation in a community’s practices” (p.188). Wenger (1990) explains that LPP “cannot be said to be successful or unsuccessful. It is a descriptor of learning...” (p.126). Lave and Wenger (1991) described the learning taking place within communities, and Wenger’s work (1998) discussed in more detail the learning of individuals within and across communities. This present research draws on both of these texts to develop the heuristic model, an instrument to guide the investigation of the learning taking place within a single blended community.

The structure of the heuristic model is comprised of the learning context and the three components of a blended community of practice which were used in the matrix of strategies, namely Environment, Engagement and Stakeholders. A close analysis of the theory of LPP (Lave & Wenger, 1991) revealed twelve fundamental characteristics, which will be discussed in more detail in this section. Each characteristic was identified most strongly within one of these three components. The characteristics of legitimate access, peripherality, transparency, artefacts and connections were strongly enabled by the Environment. The Engagement provided the characteristics of relations, participation and practice. The Stakeholders as individuals experienced the characteristics of learning and identity development, and their community experienced growth and change and

continuity. The model is conceptualised as three circular layers connected by a spindle. Each component layer is divided into segments representing the characteristics of LPP most closely associated with that component. The spindle represents the context of the community under investigation (see Figure 70).



**Figure 70: Instrument 2: A heuristic model to guide the investigation of the characteristics of legitimate peripheral participation within the online aspect of a BCoOP. The three components of a CoP, containing the twelve characteristics of LPP, are presented as layers connected by the spindle of their shared context**

Central to this study, and linking together the elements of this heuristic model, is the context of the investigation. The community in the ALEC context had need of an online community space to draw the three teams of practitioners together and support the implementation of e-learning within their practice. An overview of the stakeholders and their distribution across the teaching foci in this context can be seen in Figure 71. Because of the collaborative nature of design-based research, the online environment was developed with input from the stakeholders. In applying the model, a more thorough understanding was gained because of the awareness of the ALEC community's context, and the possibilities and limitations for stakeholders which arose through the implementation of this intervention.

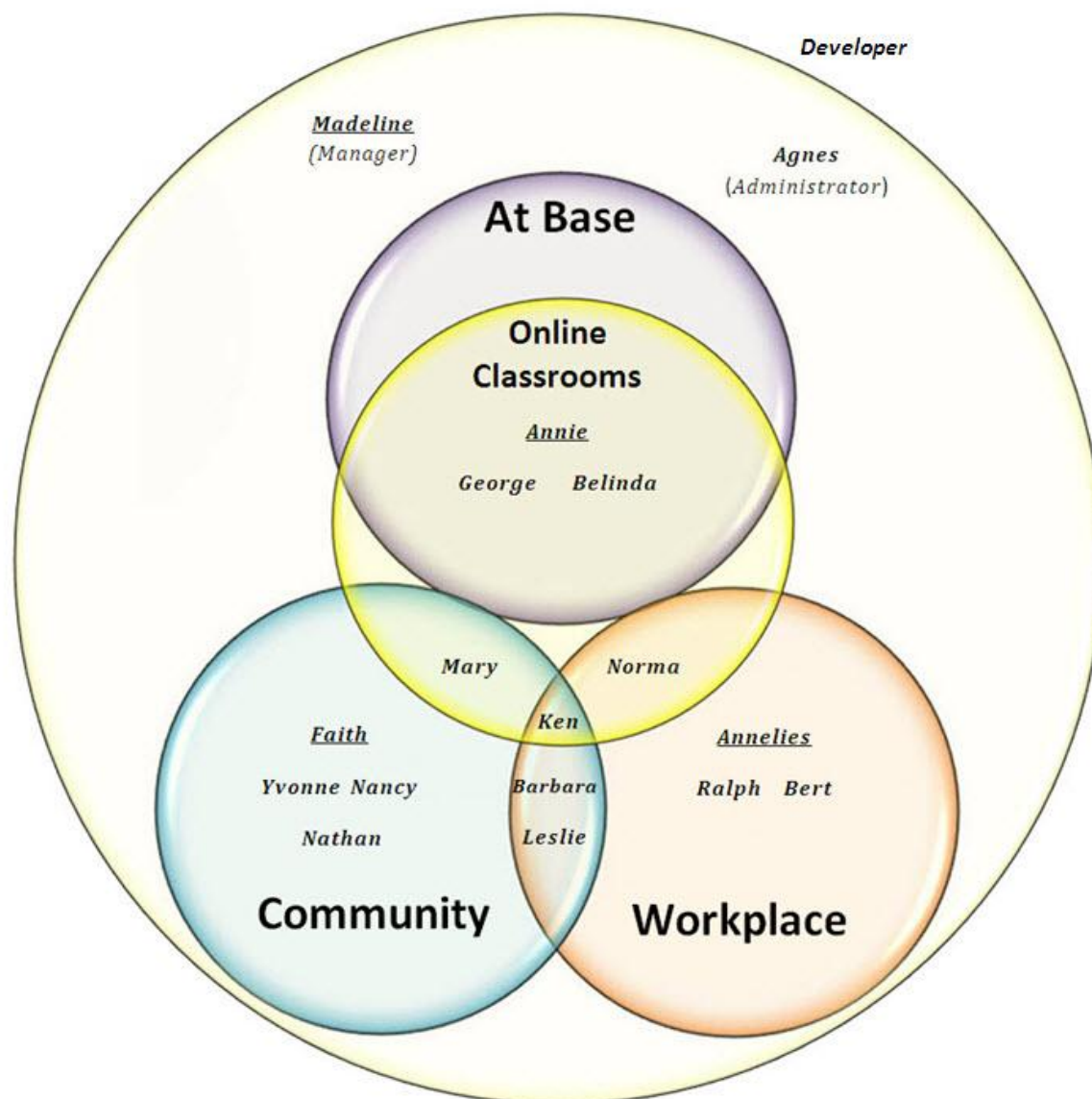


Figure 71: An overview of the stakeholders in the ALEC BCoOP during Phase Three of the research. Tutors are shown within their teams, with the team leaders underlined

In investigating the learning which took place in the online environment of this BCoOP this section of the thesis begins by discussing the characteristics of the Environment component and what the online environment had enabled for the members of this BCoOP. The Engagement component characteristics are then considered in terms of what they provided, and finally what the stakeholders experienced is discussed within the Stakeholders component.

## 8.2.1 The Environment

The environment within which a community engages has the capacity to enable or frustrate learning. In the Environment component of the model, which encompasses the largest number of characteristics of LPP, characteristics such as legitimate access to the practice taking place and peripherality, enable the newcomer to embark on a learning trajectory. The transparency of both processes and artefacts in an environment contributes to the curriculum provided by the community, and the ability to build connections with other members facilitates this socially situated learning.

### 8.2.1.1 Legitimate access

Lave and Wenger (2002) explain that “the key to legitimate peripherality is access by newcomers to the community of practice and all that membership entails” (p.116) and so the investigation begins by ascertaining the availability of legitimate access for all stakeholders. The online environment designed for the ALEC CoP deliberately enabled community members to have legitimate access to all elements of the community’s resource sharing and communication. This provided newcomers with the “wide range of ongoing activity, old-timers, and other members of the community; and to information, resources, and opportunities for participation” (p.101) which Lave and Wenger (1991) see as “essential for increasing understanding and identity” (Lave & Wenger, 1991, p.85). This legitimate access was the gateway to peripherality and to participation in the online practice within this blended community of online practice.

Lave and Wenger (2002) maintain that “control and selection, as well as the need for access, are inherent in communities of practice” (p.118). In the ALEC context this control took place through the decision, made by the organisation’s administration and the developer, not to open all areas and levels of the practice to all members of the community. Lave and Wenger (2002) believe that, “depending on the organisation of access, legitimate peripherality can either promote or prevent legitimate participation” (p.118). The decision to restrict some access was not, however, to prevent legitimate participation, but to postpone it until access was beneficial to both the members and the community. The initial access was designed to be as simple and user friendly as possible because tutors were being introduced to a technology which was new to them. Members were initially given legitimate access to all the communications opportunities and resources, which included access to administration documents for all tutors as well as resources to support them in teaching their clients and resources for professional learning.

Legitimate access to the Working Group spaces was made available to community members when they needed to participate in the collaboration. This area gave participants access to more of the tools that were available within the online environment, without the added pressure of needing to use them for teaching their clients. Access here was legitimate for members of those groups; non-

members could become aware of what was taking place there by being shown by a member who did have access.

The environment enabled participants to have legitimate access to more adept practice in the areas where they chose to be active. Practitioners indicated that legitimate access to Tutors Only “showed people what Moodle was, what it could do” (George, Phase Two interview 2). Only tutors who had the desire, and available IT infrastructure, to enable the development of their own online classrooms, were given online access to the Online Classrooms area. On requesting an online classroom of their own, practitioners were provided with legitimate access to the demonstration classrooms. This allowed tutors to “see the possibilities [of online classroom use], and just how good this could be” (Annie, Phase Two interview 2). Legitimate access was also given to all the other practitioners’ online classrooms, through the ‘Colleague’ role. This role enabled collegial discussions based on an understanding of the online practice taking place. Belinda explained, “We talked a lot about what we have got, and then of course we can go and have a look” (Belinda, Phase Three interview).

Other tutors were able to see the online classrooms by sitting beside practitioners who chose to show them, and to hear about the online classroom practice in discussions and meetings, as was the case for Mary, who posted that “[Annie] showed me her Moodle classroom for her students’ individual learning” (Mary, Phase Three interview). Open access to this area, for all members of the community, would have made the environment appear more complex to those who weren’t directly involved in this fuller online practice.

The online environment had the facility for legitimate access to be changed, so that practitioners who had begun as peripheral BCoOP members could be provided with access to all areas of the online environment, enabling members to have the broadest possible experience of legitimate peripheral participation in their context.

### 8.2.1.2 Peripherality

As observed by Lave and Wenger (1991), “there is no place in a community of practice designated “the periphery” and, most emphatically, it has no single core or centre” (p.36). To learn through LPP stakeholders require a place from which to view the practice of the community, as other members participate in it, and so investigation continues by identifying the peripherality provided by the environment. The Moodle platform of the ALEC online environment allowed for varied levels of peripherality to be tailored, and peripherality in this BCoOP was tailored depending on the choices made by the community members. Some members’ access was all peripheral, others engaged more actively in the online practice. There was no one point of practice which was the centre, there was only movement to fuller participation and greater expertise in the practice. The online environment was flexible enough that members were able to remain peripheral in their practice in some areas, such as Tutors Only, while engaging differently in areas such as the online classrooms, where they might have either no access or full participation.

Initially it was not possible for members to have a peripheral view of more mature online practice, because it did not yet exist within the community. The long period of legitimate peripherality which Lave and Wenger (1991) suggested would provide sufficient opportunities for an apprentice to take



on the culture of a practice, could not be undertaken by all ALEC members. Members such as Annie and Agnes, who were required to complete tasks in the online environment early in the development of the online environment, learned from the developer who was the only experienced online practitioner at the time. Their online practice quickly developed; both were engaging in the tasks of more adept practice within six weeks of their introduction to the online environment. Their developing practice provided the basis of the ALEC online practice in which other members could participate peripherally.

Lave and Wenger(1991) indicated that “legitimate peripherality is important to developing "constructively naive" perspectives or questions. From this point of view, inexperience is an asset to be exploited” (p.117). It is this very aspect of peripherality which allowed Mary to question the design of the At-Base tutors’ online classrooms and its appropriateness for her clients, in contrast to Annie’s view that all At-Base tutor classrooms should be designed in the same way.

The developer continued to support members who undertook aspects of online practice that were new to the community, and the ALEC online practice grew as the BCoOP developed. Lave and Wenger (1991) explain that

from a broadly peripheral perspective, apprentices gradually assemble a general idea of what constitutes the practice of the community.... In particular, it offers examples ... including masters, finished products, and more advanced apprentices in the process of becoming for practitioners (p.95)

Once all areas of the online environment had been established, examples of more adept online practice were provided through the practice taking place in Tutors Only, the Working Groups, and in the tutors’ online classrooms. Because of her knowledge of LPP the developer deliberately set up other examples, such as the demonstration classrooms and Research Space. For those who chose to engage from a peripheral perspective in all areas of online practice, these examples and the other members’ openness to sharing both resources and online classrooms, provided examples of online practice at all levels. As the ALEC BCoOP continued without the support of the developer, Annie took on the role of overseeing the online community space and became the community member with the fullest participation in the online practice.

### 8.2.1.3 Transparency

Investigation of the level of transparency enabled by the design of the online environment ascertains its facility to allow newcomers, and those on peripheral learning trajectories, to view all the communications and resource sharing in the community space, and ensure that “peripheral participants can develop a view of what the whole enterprise is about, and what there is to be learned” (Lave & Wenger, 2002, p.112). Through their access to Tutors Only, stakeholders became aware of the tools of the online practice working and the artefacts which could be created or shared through their use. Here they had access to all the resources and communication which took place. They may not have realised that it was possible for this transparency to be restricted, or recognised that the transparency was a deliberate choice made by the developer, with her understanding of LPP, to encourage a culture of shared practice. Restriction of access, or lack of transparency, took



place in the Working Groups and Online Classrooms areas for those members who chose to remain peripheral.

Lave and Wenger (1991) suggested that the design and use of artefacts, such as the tools or technology of any practice, “can become further ‘fields of transparency’, just as they can remain opaque” (p.102). “Transparency in its simplest form may just imply that the inner workings of an artefact are available for the learner’s inspection: the black box can be opened, it can become a ‘glass box’” (Lave & Wenger, 2002, p.117). In the BCoOP members’ more peripheral participation, the artefacts themselves were more visible than the tools which supported their availability. Opening the ‘black box’ of the artefacts and tools presented by the technology took place as a tutor moved to fuller participation in the online practice. As members extended their practice into the Working Groups they were given a ‘teacher’ role which provided them with the ability to explore the tools of their online practice in this Moodle environment. While access to Tutors Only had shown tutors some of what was possible in Moodle, this change in role gave them greater access and provided them with more transparency of the tools, their affordances, and the choices made in using them.

The transparency enabled by the Colleague role in the Online Classrooms area allowed tutors to view the full spectrum of tasks undertaken by others, situated within the context of their online teaching practice. This Colleague role provided full transparency of the practice both on the sections which form the interface between the tutors and their clients, and the administration area which controlled the settings and organisation of the online classroom. Allowing the transparency of the administration area facilitated a broader understanding of how the technology worked in practice. Those who were newcomers to this insider trajectory found this very valuable, “It is a great system, it’s a vicarious thing to look at what other people are doing and [their] writing[of] comments ... about other learners, and see the interactions between other tutors and their learners and that’s all good” (Ken, Phase Three interview). More experienced practitioners were also positive in their comments, “That’s like living in a glasshouse really, - yeah. It’s excellent” (George, Phase Two interview 2).

#### 8.2.1.4 Connections

“Like a local neighborhood, dynamic communities are rich with connections that happen both in the public places of the community—meetings, Web site—and the private space—the one-on-one networking of community members” (Wenger, et al., 2002, p.58). Without connections it is difficult for the transfer of knowledge to take place, so investigation of the connections provided by the online environment is undertaken. As members of a blended community of online practice ALEC staff had experienced some connections with other members through meetings and email, but until the development of the online aspect of the community, opportunities had been limited for those members whose workplace was off-site. The online environment enabled the development of these connections across the whole community online, overcoming the barriers of time and distance. Tutors Only was the most frequented intersection of all the teams and their members, and tutors appreciated the opportunities for connection that it enabled. Connection within the online environment took place through the communications which the environment facilitated, the online practice the members observed, and the activities they chose to participate in. Through reading the posts of others, stakeholders were able to learn more about what was happening in areas of the

community other than their own and had the opportunity to engage in conversations with tutors from other teams. Tutors such as Belinda felt that the online environment had, “made it so that people can be more in contact with one and another... it’s a meeting place, isn’t it, to know who’s doing what” (Belinda, Phase Two interview1). Providing the opportunity to observe the resources, practice, activities and communication of others also enabled connections to develop. As George explained, “I’ve got something I could kind of talk to them [off-site tutors] about; something more relevant, something more... I’ve got a sense of what they have been up to and that sort of thing” (George, Phase Two interview 1).

### 8.2.1.5 Artefacts

Connections could also be made through the tools provided and the artefacts which members chose to share. Lave and Wenger (1991) explain that, “the artefacts used within a cultural practice carry a substantial proportion of the practice’s heritage” (p.101). Investigation of the artefacts within the online practice and the shared history which they enable reveals aspects of the learning taking place within the community. Tutors Only, with its record of forum posts, brag book entries and the resources which tutors themselves had made available to others online, were the tools and artefacts of the online practice just as much as the Moodle platform itself. Early in the development of the online environment, member created artefacts were incorporated into the environment as much as possible. The developer explained, “I’ve added the photos they [the tutors] gave me to the site. The reason behind doing this is so that it will look more like their site and give them more of a sense of ownership and participation.” (Design narrative, 29/4/10). Artefacts, such as forum posts and resources, were also added by community members as the active online practice increased.

The Working Group spaces and online classrooms developed by the tutors were valuable artefacts for the tutors and their clients. These areas contained the relevant resources and activities for individual tutor’s practice, and in the classrooms they were presented in the context of their clients’ learning. Because these areas are relatively new, they were just beginning to form part of the history of the practice for this organisation. Even so their value was evident to the practitioners. George comments of his online classroom practice, “That’s something that I can build up, and ultimately something that I can take with me as well, and ... make it a great resource” (George, Phase Two interview 2). Both the online classroom itself, and the Moodle technology used to create it, were artefacts which George had come to value and to understand well enough for him to consider transferring them to another community.

A useful set of artefacts for members were the support documents in Tutors Only, How To. The developer created these documents and seeded the practice with these artefacts, giving an illusion of history, to establish a possible learning trajectory for the initial participants in the practice. As the members moved into more adept practice, the resources formed part of the heritage of the community of practice. Agnes found them particularly helpful, “I think the help documents are brilliant... if other tutors are asking, ‘I would like to do this’, you always say, ‘Well, go to that [Tutors Only,] How To and that’s a good help, and that’s where they can get a lot of their answers from” (Agnes, Phase Three interview). Other helpful artefacts included the demonstration classrooms, created by the developer for the purpose of providing examples of practice.

“Any community of practice produces abstractions, tools, symbols, stories, terms and concepts that reify something of that practice in a congealed form” (Wenger, 1998b, p.59). Tutors had begun to develop a common vocabulary which reified for them some of the elements of their participation in the online practice. Most notable was the word ‘Moodle’ which came to mean much more than the underlying technology platform. The online environment itself was referred to by many members as “The Moodle” for example “admin here have been encouraging people to use *the Moodle* as a primary way of communicating” (George, Phase Two interview 2). Communication and resources available within the online environment are said to be “on Moodle”. The tutors referred to their own online classroom as “my Moodle” and to the students’ individual sections in the online classrooms as “their Moodle”. Other interchangeable terms used for these student sections were ‘sites’ or ‘pages’. All of these terms were used fluently by those tutors who were actively using their online classrooms, and had become reified artefacts within this BCoOP.

## 8.2.2 The Engagement

“Legitimate peripheral participation is proposed as a descriptor of engagement in social practice that entails learning as an integral constituent” (Lave & Wenger, 1991, p.35). The Engagement component of this model encompasses the relations within this social practice, the tasks which make up the practice, and participation in both the community and in the practice itself.

### 8.2.2.1 Relations

Lave and Wenger (1991) describe a community of practice as “a set of relations among persons, activity, and the world, over time” (p.98). Investigation of the relations enabled through the online environment established that this BCoOP had the ability to transfer knowledge through those relations as practitioners. As relations developed in the ALEC BCoOP, interaction with more experienced online practitioners took place in one-to-one or team meetings, through personal electronic communication, and within the online environment. The positive nature of these relations was important for maintaining trust. During this study of the ALEC context, the researcher found no indications of negative experiences or negative relations between members of the community.

The transfer of knowledge in the ALEC BCoOP was facilitated by relations that developed between members of the community who were at a similar place in their learning, as well as those members who were at different levels. In this blended community, very little of the engagement in these relations took place solely within the online environment. Lave and Wenger (1991) assert that “acceptance by and interaction with acknowledged adept practitioners makes learning legitimate and of value from the point of view of an apprentice” (p.110). Interaction with more adept practitioners in the ALEC context took place either as part of group discussions or in one-to-one meetings. The developer recorded one opportunity early in the development of online classrooms, “George and Annie said that they were going to show [Belinda] the online classrooms and tell her all about them. My first instinct was to say, ‘No, I’ll do it.’ ... but the whole point is to get them to where they are able to teach each other. They have to start somewhere – why not here?” (Design narrative, 23/3/11). From data gathered it appears that many of these discussions took place around a computer screen with the less experienced members then implementing suggestions made by the more adept practitioners. In turn, the more adept practitioners viewed the practice of the less experienced on their own computers, and provide feedback in discussion, to help them improve


their practice. George explained how Annie shared her more adept practice with him. “Earlier on when Annie and I were working quite closely together, she would look at my site and sort of comment on things, suggest things” (George, Phase Three interview). Less advanced practitioners also learned by engaging in practice alongside their more advanced colleagues “we worked quite closely earlier on in developing the sites. And when I say that - she did something fantastic and I borrowed it, if that's what I mean by working closely, to be honest” (George, Phase Three interview).

### 8.2.2.2 Practice

“The practice of the community creates the potential ‘curriculum’ in the broadest sense - that which may be learned by newcomers with legitimate peripheral access. ... A learning curriculum unfolds in opportunities for engagement in practice”(Lave & Wenger, 1991, p.93). Investigating the engagement in online practice which was enabled for the stakeholders, revealed the learning curriculum provided by the community. In the ALEC context, the members’ engagement in practice could be clearly seen as they undertook the tasks which made up this online practice. The tasks of participation identified in the online practice were distilled from the list of tasks completed by the participants recorded in the Moodle site logs.

Lave and Wenger (2002) believe that through LPP, as well as developing “an increasing sense of identity as a master practitioner, moving toward full participation in practice involves ... a greater commitment of time, intensified effort, more and broader responsibilities within the community, and more difficult and risky tasks”(p.122) are undertaken by practitioners. These tasks were ordered according to the level of intentionality, effort and risk involved in participating in the task, as well as the movement from the periphery of practice required for their completion. Engagement in the practice of the ALEC BCoOP, like that of the communities studied by Lave and Wenger, began with “partial participation, in segments of work that increase in complexity and scope” (Lave & Wenger, 1991, p.80). The tasks were aligned to three of Wenger’s (1998b) learning trajectories which formed a path to full participation in practice: peripheral, inbound and insider. This showed a natural progression through the ‘curriculum’ of this practice. This progression of tasks is illustrated in Figure 72.

The tasks usually engaged in on a peripheral learning trajectory involved acquiring basic IT skills, logging on to the ALEC community site, reading content and forum posts, and accessing or downloading resources. Lave and Wenger (1991) observed that “the initial, partial contributions of apprentices [or newcomers] are useful” (p.111). These BCoOP tasks were mostly useful for teaching preparation and administration purposes. George explained, “I’m using it all the time for my own and admin stuff for accessing unit standards [assessments], so I use it every day for that, multiple times a day in fact” (George, Phase Three interview). As Lave and Wenger (1991) indicated, “productive peripherality requires less demands on time, effort, and responsibility for work than for full participants. A newcomer's tasks are short and simple, the cost of errors are small” (p.110). These peripheral tasks involved only community members and the cost of errors was only to the individual member. Peripheral tasks left no trace of member activity visible to other members in the online environment. These tasks would be considered ‘lurking’, and “from a community of practice perspective, lurking is interpreted as ‘legitimate peripheral participation’”(Wenger, White, & Smith, 2009, p.9). Peripheral tasks connected the member to the community, made them aware of events and information, and made use of the artefacts made available within the environment.

Learning trajectory	Task in the online environment	
Insider trajectory	Unenrol student	 Direction of increase in level of intentionality, effort and risk involved, and movement from the periphery of practice required for completion
	View course reports	
	Edit summary or settings	
	Add or edit a book	
	Add a forum	
	Add or edit calendar event	
	Add or update label	
	Update resource	
	Add resource or weblink	
	Edit a wiki	
Inbound trajectory	Upload file	
	Answer quiz question	
	Answer choice question	
	Add forum discussion	
	Add or change forum post	
Peripheral trajectory	View user reports	
	View a wiki	
	View forum posts	
	View a book	
	View or download resource	
	View Moodle site	

**Figure 72: The tasks of the online practice of the ALEC BCoOP aligned to three learning trajectories, and indicating the increasing level of intentionality, effort and risk involved, and the movement from the periphery of practice required for completion of the task**

The tasks involved in an inbound trajectory began with greater engagement in the community's online space. The task of posting in a forum moved the member towards more productive involvement in the online environment of the community, but also involved the risk of adding content to the community which might not be considered sound, helpful, or be appreciated by other members and this higher risk made the task much less peripheral. The useful contribution of sharing resources with others in the community was made possible for all members through the forums in the ALEC online environment. The most complex task in this trajectory was taking a step from posting in a discussion forum, to posting in the Resource sharing forum and adding the resource as an attachment. The developer ensured that forum contributions were emailed to all community members "to encourage people by letting them see what is happening in the forums. I think it will encourage people to get in there and post when they know that others are doing it." (Design narrative, 18/2/11). All of these tasks could be completed within the online environment through the use of tools which were available to them from the first time they logged in. These tasks were kept as uncomplicated as possible to ensure that the threshold of technology understanding involved was minimal, and to encourage community members to achieve this level of participation. All tutors who participated in the Working Groups area did so on an inbound trajectory, as they collaborated on tasks and resources. With very few exceptions the tutors chose to continue using

the same tools which they had used in Tutors Only on their inbound trajectory, even though it was possible here to progress to an insider trajectory.

The simplest task on the insider learning trajectory was adding content to the meeting agenda wikis. The wikis were added to Tutors Only in October 2011, and the task of adding to them could be completed by any community member from that date. This task only involved other community members, but it added the risk of editing content that another member had created, and required more technical confidence than adding a forum post. This task was only completed by a few tutors.

Other tasks on the insider trajectory were completed as a member undertook greater responsibility in an area of the online environment. In Tutors Only this level of practice was undertaken by Annie, with her responsibility for national standards assessments, as she made the most up to date resources available online for the tutors. Agnes, the office administrator, also worked at this level in Tutors Only by uploading and distributing information and administration documents. Agnes could have been considered to be on an insider trajectory however both she, and Madeline the manager, did not progress to full online practice in the ALEC community because they saw no reason to develop their own space in the online environment. They were considered to be on an inbound trajectory, but with much fuller participation in the online practice than the off-site tutors.

Those tutors who were developing an online classroom undertook tasks on an insider trajectory, and progressed towards mastery of the online practice at its fullest. While sharing resources online was an important step in tutors' engagement in online practice, greater value, importance and risk was involved in the task when adding resources for clients to use, or links to websites for clients to engage in learning activities. In providing structured guidance and meaningful organisation to the resources on the sections in their online classroom, these tutors took another step closer to mastery of the online practice. This provision of visual organisation, and guidance in the use of resources for students, involved both considered choices and a greater investment of time and effort. The next task toward mastery was using the tools available to provide the opportunity for clients to engage in activity within the online classroom itself through the use of a forum. George expressed a desire to undertake this task, but Annie alone was the tutor who progressed to accomplishing it. She made consistent use of forums in her online classrooms for her students to engage in communication with her and with each other in both formal and informal settings. Mastery tasks in the online practice of this blended community involved more extensive, appropriate use of the variety of tools available within the online classroom, or taking administrative responsibility for an area of the online environment. In Annie's case, she engaged in the fullest practice by taking on responsibility for the Moodle site itself.

In investigating the LPP characteristics of individual learning and practice, an indication of the learning taking place was provided by mapping the tutors' learning trajectories through the tasks of this online practice. This was indicated by recording a tutors' first independent completion of a task. The resulting trajectory through the tasks of the online practice can be seen in Figure 73. While a path was mapped out for an 'average' community member, none of the tutors' learning trajectories followed this path. There were no 'typical' learning trajectories. There was, however, a general trend for tutors to engage in tasks which involved an increasing level of participation in the practice.



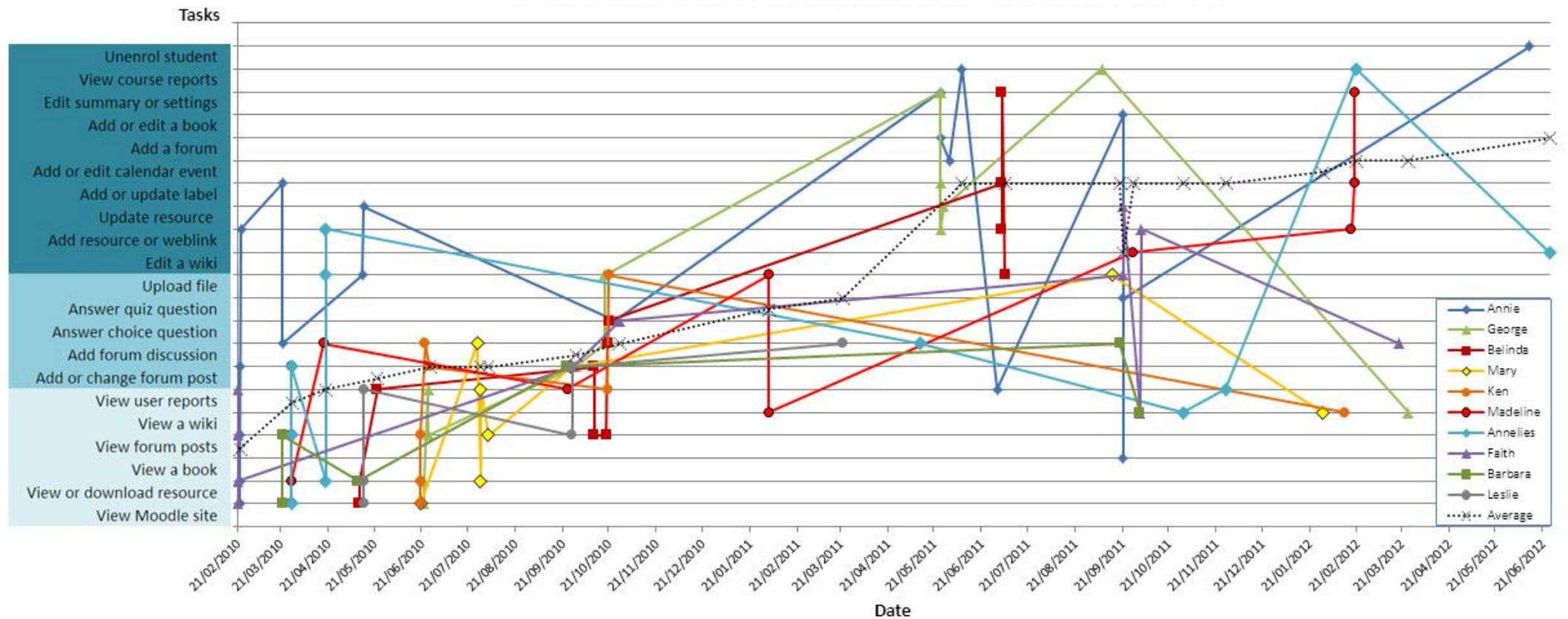


Figure 73: A range of members' trajectories through the tasks of the online practice of the ALEC BCoOP. The markers indicate the member's first independent completion of a particular task. The dotted path is the proposed path of a 'typical' community member progressing gradually through the tasks



Lave and Wenger (1991) assert that “an apprentice’s contributions to ongoing activity gain value in practice -- a value which increases as the apprentice becomes more adept” (p.111). The increased value of the online practice for their clients and themselves was reported by tutors as they became more adept at using the tools available within the online classroom and providing appropriate e-learning opportunities. George described his clients as having a “more engaged, more dynamic involvement with their learning” (George, Phase Three interview) because of the online classroom. Interview data indicated that the practice increased in value for the tutors too as the online classroom became more useful, and this encouraged them to increase their involvement in the online practice.

### 8.2.2.3 Participation

Within legitimate peripheral participation, participation has a double meaning “both as ‘a person participating’ and as ‘a practice participated in’” (Lave, 2008, p.286). Investigation of participation in both these aspects of participation helps to reveal the learning taking place. In this blended community the characteristic of participation as a person was seen in members’ engagement within the online environment, but participation also took place in face to face meetings. Interview data indicated that some discussions took place around a computer screen where less experienced practitioners could learn by participating in practice alongside more experienced practitioners. Discussion about practice in the physical environment flowed through to the online environment as tutors shared ideas and resources online. Actively participating in practice alongside others, such as Belinda “looking at, and discussing with the others how they’ve got theirs [online classroom] set up” (Belinda, Phase Two interview 2) encouraged practitioners further along in their learning trajectory.

Levels of participation varied amongst the members of the ALEC BCoOP. Those members who had online classrooms were fully engaged in participation, and at the other end of the scale those whose participation was peripheral or marginal only participated when they needed and were able to. Figure 74 shows a comparison of members’ participation using circles, drawn to scale, to represent the number of times members of the community participated in the tasks of the online practice. The colour gradations within the circles indicate the percentage of tasks that belong to each of the peripheral, inbound or insider tasks which were shown in Figure 72.

For those on an inbound trajectory, engaging in participation in practice in the online environment could include forum discussions on practice related topics, and sharing resources and ideas with other practitioners. For those on an insider trajectory participation also included the creation of content in the online environment, and sharing online. An example of this was the section in Tutors Only, Resources which Annie decided to develop for sharing resources specifically for online classroom use by other tutors. She explained that the section would contain “all the different links [to websites], in once space under headings, so if anybody wants to look up ‘place value’, ‘phonic sounds’ or whatever they can go in there - there’s six or seven links” (Annie, Phase Three interview). Participation here took place both in choosing to share resources created for practice, and in the process of making them available to the community online. George’s increasing participation and mastery of this practice showed in his comment, “Annie and I will talk about it [developing the resource site], she’ll be doing most of it but I’d like her to delegate a bit of it out to me so that I have a hand in it as well” (George, Phase Three interview).

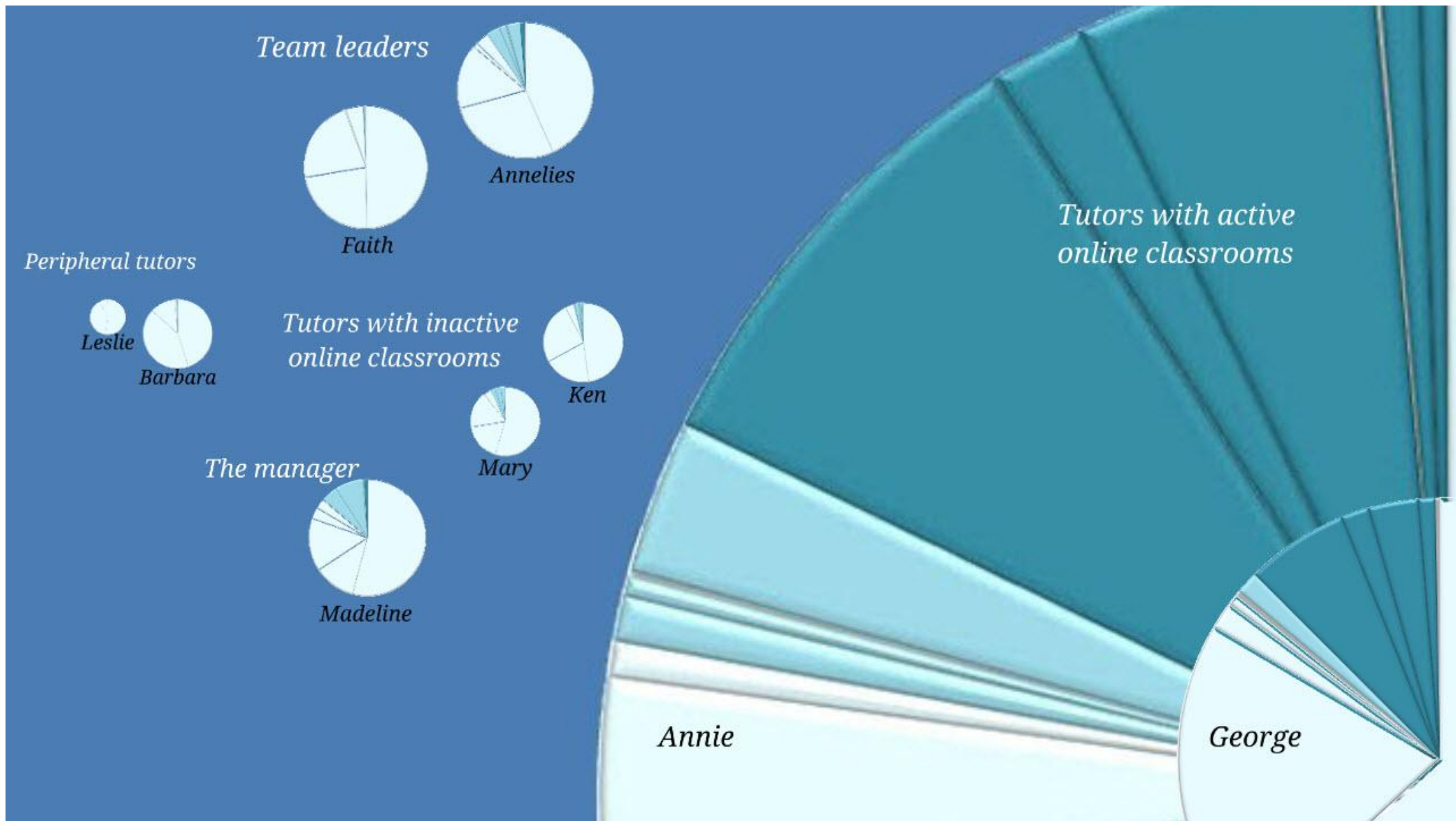


Figure 74: ALECoOP members' participation compared as scaled circles, representing the number of times members participated in the tasks of the online practice. The colour gradations within the circles indicate the percentage of peripheral, inbound or insider tasks

Members on an insider trajectory also participated by having their resources and practice openly available to other practitioners. Ken commented that “it’s just so nice being able to get resources from other teachers’ classrooms and know that it’s a sharing process” (Ken, Phase Three interview). Tutors acquired resources from each other’s classrooms after observing them in the online teaching context. This type of participation by those on an insider trajectory also enabled comparisons to be made. “As opportunities for understanding how well or poorly one’s efforts [to] contribute are evident in practice, legitimate participation of a peripheral kind provides an immediate ground for self-evaluation” (Lave & Wenger, 1991, p.111). Tutors used their participation to make this kind of self-evaluation both directly, “I can see where people are at, and how far ahead or behind I am” (George, Phase Two interview 2) and indirectly, “I’m really happy with where it’s at, but if anyone had a close look they’d know that it’s probably time for me to put a little bit more effort in to it” (George, Phase Two interview 2). Participating in openly shared practice of this depth also enabled more adept practitioners, such as Annie, to support others. She explained that, “knowing that I can see what Belinda’s up to, and George, means I know what sorts of things they might need to know” (Annie, Phase Two interview 2). This participation could also lead to evaluation, or judgment, of others’ practice as in Annie’s comment, “They’re going through the motions... they’ve put a few things up but they never change them ... and a lot of that what they do is far too general.” (Annie, Phase Three interview). Participation would need to continue to be a positive experience for all the stakeholders to remain comfortable with it.

### 8.2.3 The Stakeholders

In investigating the learning which took place in the online environment developed for ALEC, which supported professional development in e-learning, we look more closely at the outcomes of its implementation for all those who are involved with it: the stakeholders. As outlined at the beginning of this chapter, the stakeholders in this context are the developer, the ALEC manager, the office administrator and the three teams of tutors within this blended community of online practice. The Community and Workplace teams overlapped where three tutors taught in both teams. While members of all three teams began to develop online classrooms, only the At-Base team was fully represented (refer to Figure 76).

The ALEC staff all entered the online practice as relative newcomers having little, or no, experience of an online learning environment. As learning took place, and individual members’ identities as practitioners developed, the community grew and changed. The BCoOP which developed encompassed a wide range of levels of participation in both the blended community and the online practice. The ways in which the stakeholders experienced LPP are revealed by the detailed consideration of the four Stakeholder component characteristics of the analytical model, which follow.

#### 8.2.3.1 Member - Identity

“Learning and a sense of identity are inseparable: they are aspects of the same phenomenon” (Lave & Wenger, 2002, p.124). The individual stakeholders involved with this blended community of online practice undertook two forms of change, both were characteristics of LPP. These were taking part in the learning of the online practice, and constructing an identity as a practitioner. Inextricably linked as they

are, their investigations were difficult to separate and so a clearer picture of member identity is revealed after also reading the section on member learning. All members grew more confident in their use of the technology itself and in the choices they made in the online practice. The construction of identity in the ALEC context was evident as members chose to move to fuller participation in the online practice.

The development of practitioner identity was illustrated by the At-Base tutors as they extended their practice to provide e-learning for their clients through an online classroom. The three At-Base tutors each constructed an identity as a full practitioner of e-learning within the online environment. Annie continued as a leader as she worked in this new environment. She began using her online classroom confident in her ability to use the technology. "I'm a 'read the instructions if things go wrong' kind of person, ... see if you can figure it out, and then if it's not working may be then you need to ... look a bit further" (Annie, Phase Two interview 2). Her preference for the use of e-learning tools over pen and paper, and the expertise she developed, drew her to a more centripetal position in the online practice than George or Belinda. Her identity as both leader and as the most adept practitioner encouraged the others to learn from her practice. Comments Annie made about other tutors reinforced her own identity as one who was more adept in her practice than others, yet each of the three At-Base tutors constructed identities with competencies within the online practice far exceeding those which they had initially.

George began by closely following Annie's practice, but developed a practitioner identity in which the e-learning practice within the online classroom became his own. He described himself as "the average technophobe" (George, Phase One interview) and "not a natural at any of this stuff" (George, Phase Three interview) with far less competence in the use of technology than Annie. However, he became capable of building and maintaining his own online classroom for his clients. Annie saw him as less interested in the practice of e-learning, but George developed an identity as a practitioner who was not only competent, but wanted to move to fuller participation in practice in the future. "I'm really in the long term really committed to continuing on with the Moodle site for my learners even in spite of the difficulties" (George, Phase Three interview).

Belinda's practitioner identity began as that of someone who avoided any use of technology, "I just didn't have any confidence in my ability with computers with dealing with programs and stuff like that... I've been basically afraid of the computer" (Belinda, Phase Three interview). She developed into a practitioner who was able to improve her skills either with support from others or, when there was no support available, through independent trial and error. "It's certainly helped my computer skills ... now I just sit there and carry on until I work it out" (Belinda, Phase Three interview). While her use of the online environment was not as extensive as Annie and George's, in terms of the change in her identity within the BCoOP, Belinda showed the most development as a practitioner.

### **The manager and office administrator**

The Identities of the ALEC manager and office administrator were more complicated than those of the tutors because, while they were members of the community, the lack of teaching in their roles excluded them from moving in to full participation in the online practice. Both of their roles were important in the

blended community and both of these stakeholders became more than peripheral. They learned a considerable amount about the environment, its capabilities and how to participate within it and, Agnes in particular, passed some of that learning on to other community members, but their practice remained different from those stakeholders who were able to choose to move on to an identity as a full or expert practitioner.

### **The developer**

While not included as part of the community of practice in the long term, the developer was nonetheless a stakeholder. In many ways the developer's identity within the community was as that of an expert practitioner from a domain different from adult literacy, which overlapped that of the ALEC tutors in the area of online practice. As well as building the online environment in which the BCoOP could develop, she provided the support and the guidance to enable the stakeholders to begin learning the online practice. The developer's identity as an online practitioner was more important early in the development of the BCoOP, in providing the initial examples on what e-learning practice was possible in the online environment, and in providing support and guidance as a practitioner, as the tutors learned the basics of using Moodle.

With the identity of expert practitioner in e-learning and blended teaching, the developer provided those tutors who undertook the development of their own online classrooms with examples of online practice. This was provided through the online support resources, the demonstration classrooms, and in meetings. Some enthusiasm amongst the tutors was generated through the developer discussing her own experiences of teaching in an online environment. Annie revealed, "With you telling me about how you did [taught] the course, I thought, 'you know this is so - it's great!'" (Annie, Phase Two interview 2). The developer was able to provide examples of the 'Why', the 'How' and the 'How to' of practice, through the demonstration classrooms, particularly the Educational Design Classroom, and the support documentation. These exemplar resources quickly became less important as the tutors developed their own practice, and began to function as a BCoOP where the members learned from each other.

As the tutors participated in fuller practice, the identity of the developer deliberately became more peripheral in order for the community to look to its own expert practitioners. This was not an identity the developer found easy as evidenced by her comments. "I need to now distance myself even further from their practice so that they don't rely on me at all, but a huge part of me just wants to jump in 'boots and all' and show them what huge possibilities there are and help them to put those possibilities in place" (Design narrative, 9/5/12). Through supporting the community in becoming self-sustaining, the developer worked hard to disengage. She was the only community stakeholder who planned an outbound learning trajectory.

### **8.2.3.2 Member - Learning**

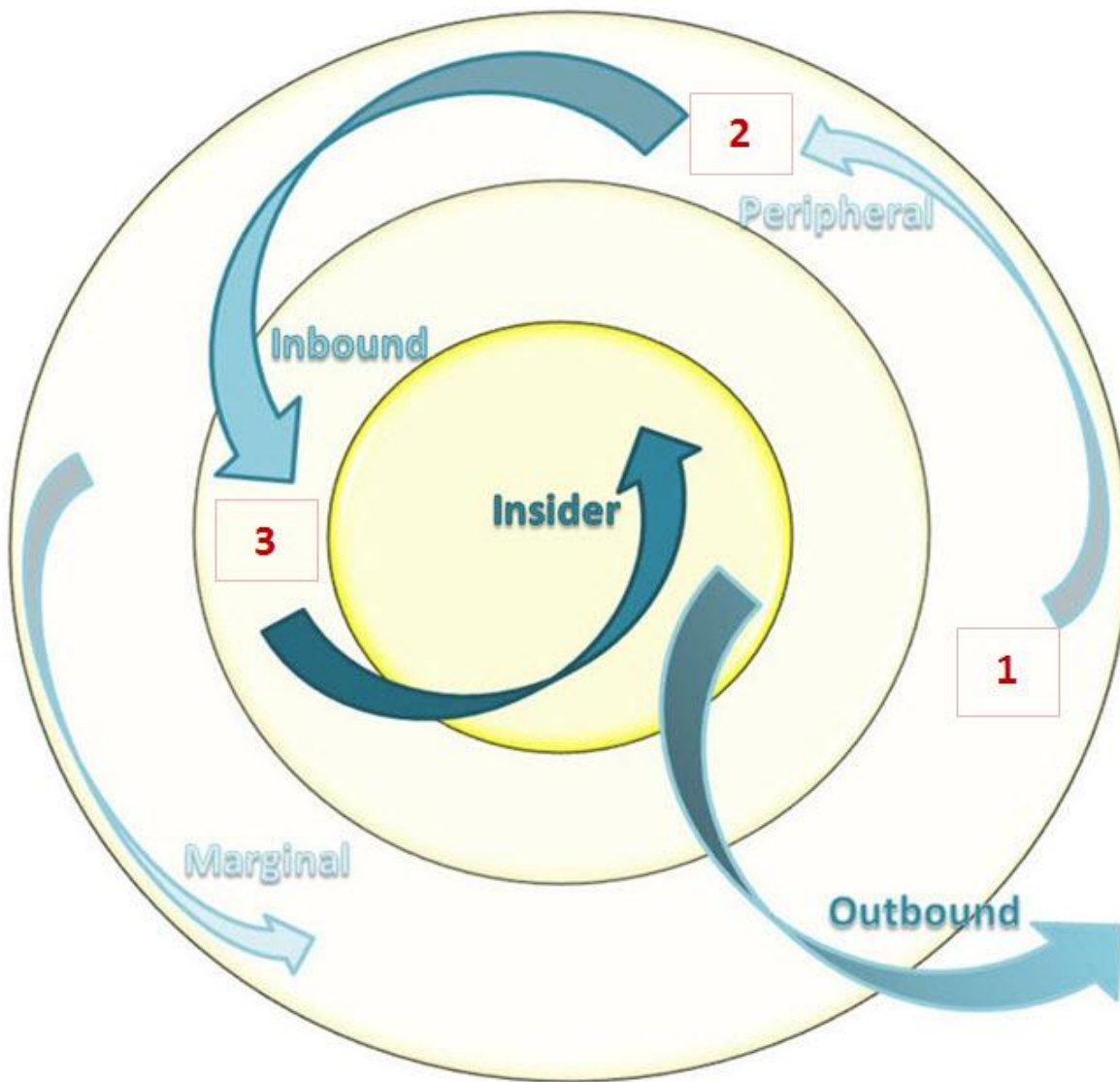
Wenger wrote that "by observing and working with journeymen and masters, they [apprentices] develop a sense of trajectory that expands their identity in time" (Wenger, 2000, p.241). Learning supports the expansion of identity, and draws members into the practice of the community, and so investigation of identity continues in investigating learning. As the tutors learned more about the

possibilities the online practice offered in providing e-learning for their clients, their identities as practitioners in this BCoOP were constructed. The journey from apprentice to master according to Lave and Wenger takes place along the curve of a centripetal learning trajectory. “Rather than learning by replicating the performances of others or by acquiring knowledge transmitted in instruction, we [Lave and Wenger] suggest that learning occurs through centripetal participation in the learning curriculum of the ambient community” (Lave & Wenger, 1991, p.100) In the ALEC context, learning took place through three major opportunities for members to develop their identity.

These opportunities for identity development, embodied by the learning trajectories in the ALEC context (see Figure 75), encompassed the range of learning trajectories described by Wenger (1998b), with the exception of the ‘outsider’. The first opportunity for identity development was to become a community member who engaged with the community’s online environment – to become a member on a peripheral learning trajectory. The second opportunity for identity development was choosing to become actively involved in the online community environment – to become a member on an inbound learning trajectory. The third opportunity for identity development was choosing to become a tutor developing an online classroom – to become a member on an insider learning trajectory.

“Identities as learning trajectories are defined by where we have been and where we are going” (Barros, Midgley, & Pinzón, 2013, p.12). Becoming a member on a peripheral learning trajectory involved the member in learning which developed their identity from a member who had never used the online environment, to being a peripheral member who engaged with the content in the community’s online environment. This step, similar to becoming an apprentice in the communities studied by Lave and Wenger (Lave & Wenger, 1991; Wenger, 1998b), was made by all the ALEC stakeholders. Peripheral members learned how to participate in the basic tasks of the online practice. Their participation on this trajectory was passive and left was no visible trace within the online environment. Members, like Belinda who had avoided using computers, began with very little background knowledge of this practice. “I remember that first day we all went over, and we all had to log on, and I could hardly even do that” (Belinda, Phase Three interview). The circumstances of their work environment and the choices the members made determined the progression of their online practice. Members who chose to participate more actively within the online environment moved to an inbound learning trajectory. They were willing to be visible online by contributing information or resources to the community online through activities which had been initiated by other members, and learned how to engage actively in the online practice. Moving to an insider learning trajectory involved a tutor initiating, rather than a contributing to, a task of the online practice. In the ALEC context, this choice could be actioned through practice such as building a Working Group space, taking responsibility for an activity within Tutors Only, or developing their own online classroom.





**Figure 75: Centripetal movement through learning trajectories showing three opportunities for identity development (Trajectory terms are from Wenger (1998b))**

Not all the tutors were on a trajectory which would lead to full participation as a member of the BCoOP. The developer, as described earlier, was on an outbound trajectory. Some tutors preferred not to use the online environment or pursue the use of an online classroom for their clients, and they remained on a peripheral learning trajectory. As Annie pointed out it would be good “to all learn, and be working on doing this together... but not all the lead tutors are really interested in using Moodle” (Annie, Phase Three interview2). Other tutors, who had no access to the technology infrastructure which made the use



of an online environment possible, or whose work place circumstances or client group prevent them from taking up this opportunity, remained on a marginal trajectory, peripheral and unable to move into fuller participation in practice.

Tutors whose work circumstance provided them with the infrastructure and equipment to use an online learning environment for their team or their clients, and who chose to do so, moved along an inbound trajectory. These tutors were provided with the online capability they required, and legitimate peripheral access to the relevant practice of other members of the community. By the end of the research data collection in Phase Three, seven tutors had moved to fuller participation in the online practice on an insider learning trajectory (see Figure 76). The most experienced online practitioners were the three At-Base tutors who were using online classrooms with their clients. They moved towards mastery of the technology of the practice, as well as improving their ability to incorporate e-learning for their learners through the online classrooms. George had researched online practice outside the ALEC community and incorporated e-learning reflectively into his teaching practice, and Annie took on other roles within the online environment, such as responsibility for Resources, and ultimately for the whole ALEC community site.

In legitimate peripheral participation “there is very little observable teaching; the more basic phenomenon is learning” (Lave & Wenger, 1991, p.92). In the ALEC context overt teaching was minimal. While some initial teaching took place in support sessions, the developer noted learning taking place within community.

Annie is now using the calendar. I had nothing to do with teaching her how to do it, so either she learned it from Agnes or she taught herself from the help documents. The good thing is that she can only be using it because she has seen it being used in Tutors Only. The example and the learning have taken place within the community. (Design narrative, 10/10/11)

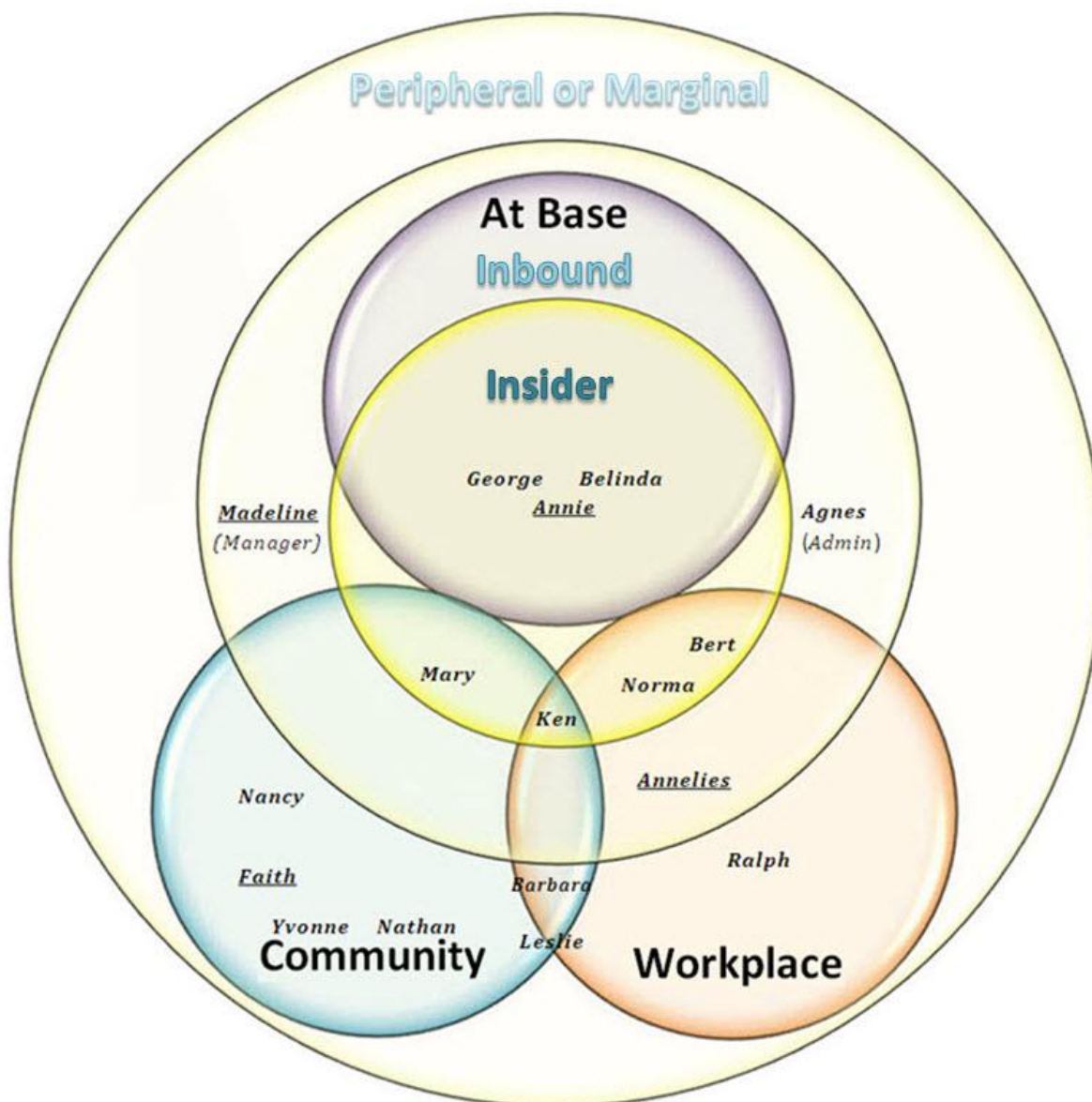


Figure 76: The peripherality of the ALEC staff members, indicated by the centrality of their position. The most central tutors are those with an insider trajectory and the fullest participation in the online practice. (Members of the ALEC BOCop are shown within their teams, with the team leaders underlined)

Learning opportunities were provided through the ability to view the online practice of other community members both face to face and online. Initially George and Annie, as the first two tutors to have online classrooms, worked physically alongside each other. When planning her classroom, Mary spent time looking at the classrooms of other tutors as well as at the demonstration classrooms. “When I looked at your [the developer’s] patterns it was good to see different ways of doing it because when I looked at the teachers they were sort of doing it the same way” (Mary, Phase Three interview). George used Annie’s classroom as the main resource for his learning “[seeing Annie’s classroom] helped me to work out how to structure the sites and what would be other resources as well” (George, Phase Three interview). Some of the learning took place by copying, some by asking others, some by observation, some by collaboration and, for those tutors who were the first participating in the fullest practice, some learning was through trial and error or what Annie described as “bash away and work it out” (Annie, Phase Three interview).

Each of the above opportunities to learn and to further develop an identity as a practitioner in this BCoOP is associated with greater commitment and engagement in an increasingly complex set of tasks which reflect this centripetal movement in practice, and it is to the Engagement which took place which we now look to further our understanding of LPP in this context.

### 8.2.3.3 Community - Growth

The growth of the community, as a characteristic of LPP, can be seen in: the development of the social structure of a community, an increase in the community’s overall expertise in the practice being learned, and in the process of community development and reproduction. Investigation was undertaken in all three areas. The longstanding communities of practice, which Lave and Wenger (1991) researched, all reproduced themselves as newcomers mastered the community’s practice and replaced retiring practitioners. However, investigation of the community growth revealed that, even at the end of this study, the ALEC BCoOP was very young, and little in the way of community reproduction could be observed.

Much of the growth of the community was dependent on the manager, Madeline. Her position was unique as a member of the community who could not participate in the teaching practice, yet had a major influence over the conditions within which the other community members worked. Initially plans were made, by the developer and the manager, to encourage growth. The developer reported, “[The manager] is going to encourage the lead tutors to encourage their tutors... into the site by posting in the forums, and adding more resources to the site so that it will be worthwhile for the tutors to look there” (Design narrative, Phase One). This encouragement never became visible in the online environment and the growth of the BCoOP continued to develop naturally.

Growth in the BCoOP’s use of the online environment took place and continued to increase, partly through the encouragement of the tutors who were involved in the practice of using an online classroom to support e-learning for their clients. These tutors were affirming of its use, and communicated that to other tutors. It was evident that the tutors who were using online classrooms saw their use as an integral part of their practice, one which they personally wished to continue. These

tutors were also keen to further develop the practice of e-learning in their online classrooms. This was particularly true of Annie who explained that her, “main goal is to expand it [the use of Moodle classrooms] with the other tutors more” (Annie, Phase Three interview). As the range of their clients’ literacy needs increased these other tutors, George and Belinda, were also looking for ways in which to develop their use of the online classroom further. The practice of the community grew as other tutors joined these more experienced practitioners, after observing the online practice that was taking place. Mary was an example of that. Having observed Annie’s online classroom she commented that she too wanted to develop her own online classroom. While, for various reasons mentioned in chapter five, Mary, Norma and Ken were not using their online classrooms with clients, they were keen to share in and become part of this more experienced group of practitioners.

In analysing the community’s growth, the professional development taking place through the community’s social organisation was considered. The tutors participating most centrally in the practice were all At-Base tutors and during Phase One and Two of the research Annie, their lead tutor, had become an acknowledged master within the online environment, just as she was in the face to face environment. Annie was also making decisions on what shape the practice would have for the tutors in her team, “I’ve got to somehow get across to them how I see it working” (Annie, Phase Three interview). When the developer withdrew from the ALEC community Annie chose to increase her commitment to the use of the online environment further. “I would be the person probably who would keep it going, and because I’m enthusiastic about it more or so than anybody else, I would ... try and keep things going” (Annie, Phase Three interview). The result of this decision established Annie even further in the role of ‘master’, as she replaced the developer and became the most knowledgeable person in the use of the Moodle environment. George had developed to be the next most adept of the tutors. While he followed Annie’s lead, he also had his own ideas on how the e-learning practice might develop for his clients, and he was hoping to take on more responsibility, “I’d like her to delegate a bit of it [developing a resource area] out to me so that I have a hand in it as well” (George, Phase Three interview). Belinda was the least experienced online practitioner of the At-Base tutors, but she too took part in the sharing of practice which contributed to the professional development in this team.

Outside this pre-existing social structure, a norm of openly shared online practice had developed for the At Base tutors, alongside the online classrooms. This shared practice extended to the tutors from the other teams as they developed their own online classrooms. The understanding that had been communicated was that, in continuing the practice, “it’s about networking, and supporting - mentoring each other” (Mary, Phase Three interview). This openness to passing on skills to others supported the reproduction and growth of the BCoOP by providing fuller, more mature, participation in practice for relative newcomers to learn alongside. These tutors could in turn become masters or full practitioners alongside whom newcomers could learn. In this way the community could be reproduced. Lave and Wenger (1991) wrote that “the process of community reproduction... must be deciphered in order to understand specific forms of legitimate peripheral participation through time” (p.56) but while the two years of observation of this young blended community revealed the development of expertise, it was insufficient time to observe the reproduction of the community.

### 8.2.3.4 Community - Change and continuity

The community and the practice both grew and changed as LPP took place within The ALEC BCoOP. The continuity – displacement contradiction described by Lave and Wenger (1991), where newcomers within a community learn the practice, thus enabling them to replace the existing masters, can cause conflict. In the investigation of change and continuity in the young ALEC BCoOP the conflict of this contradiction was not in evidence. However, as Lave and Wenger (1991) explained "the move of learners toward full participation in a community of practice does not take place in a static context. The practice itself is in motion" (p.116). In the context of the ALEC blended community this was especially so, as much of the practice was in the process of becoming established.

ALEC BCoOP had the potential to expand and be reproduced in ways which would make the learning taking place through LPP clearer, as tutors from outside the At-Base group, with their wider client groups and differing experiences, brought with them their own ideas of how e-learning would work best with their clients and their co-workers. Supporting tutors to move towards the fuller online practice of the community could have also led to changes in structure, such as Norma's suggestion of including other organisations in the online environment. She explained, "If I've got a trainer over in Sydney, it would be – 'Have a look at what we're doing. What are you guys doing over there?'" (Norma, Phase Three interview).

Newcomers to the practice of developing an online classroom such as Mary and Ken were able to see where their practice might differ, when they observed the online practice taking place in the other tutors' classrooms. "You can pick up things, mostly good things that you can emulate. There might be the odd thing that you think 'Oh, I wouldn't do it that way' but that's all really useful" (Ken, Phase Three interview). As Lave and Wenger (1991) point out,

Newcomers are caught in a dilemma. On the one hand, they need to engage in the existing practice... and to become full members of the community in which it exists. On the other hand, they have a stake in its development as they begin to establish their own identity and its future (p.115).

As the ALEC BCoOP experiences further growth and change in the future, it remains to be seen whether having newcomers teaching differently in their online classrooms would broaden the existing practice peacefully, or create conflict within the ALEC community.

## 8.3 Applying the instruments to support professional development in e-learning

This final section of the chapter describes the process through which the two instruments, developed from the theoretical findings, can be applied to support professional development in e-learning. Once again this process is illustrated through examples from the ALEC BCoOP. The two instruments described in the previous sections of this chapter provide different types of support for this and other organic communities of practice. The matrix instrument, which encapsulates the design principles from this

research, provides strategies to support the blending of a community through the addition of an online environment. The three components targeted by the strategies are the stakeholders of the community, their engagement within the online environment, and the environment itself. These strategies are initiated within the three stages of: designing the online environment, implementing that environment for an existing community, and sustaining the developing blended community. The model instrument provides a heuristic to guide investigation of the learning taking place within the online environment of a BCoOP. It too targets the community components of stakeholders, engagement and environment. The heuristic model indicates what to expect in terms of LPP in a blended community's online environment as the practitioners progress towards full participation in the online practice, and thus also helps to identify what might be missing.

The findings of this research indicate that, within a staged approach, the use of these two instruments supports the development of a BCoOP and professional development for e-learning. Each stage builds on the previous stage to support both the developing community and the learning of individual members. This staged approach builds capacity within the environment to support community members to attain mastery in this new form of practice. This gradual process is particularly supportive where there are initially no masters of this new practice within the existing community membership. It enables the development of more experienced practitioners and masters, whose practice then provides a learning curriculum for other members within the community. The first three stages of this professional development intervention correspond to the stages within the matrix of strategies; Design, Implement and Sustain. The final stage is that of reflecting on the professional development for e-learning taking place. This reflection, guided by the heuristic model, considers the way in which learning takes place within the online aspect of the BCoOP, and the way in which it is supported by the designed environment.

Described in the following paragraphs are the stages as they took place in the ALEC context. Here they aligned with the design-based research taking place, and were supported by the collaboration engendered by this research methodology. Although these stages align well with the phases of design-based research, this staged approach could take place without the formal research.

The initial stage, Design, involves the design and development of an online environment in collaboration with the members of an existing organic CoP, being mindful of the professional practice to be supported. The design, underpinned by Lave and Wenger's (1991) original theory of LPP, situates the community within the online practice to be developed, and enables the community members to move into the fuller practice of e-learning at a later stage. The strategies in the matrix recommend beginning with an identified need and community input to design an environment which fits the present community, and has the capacity to provide for future development. This initial stage of development for the ALEC BCoOP was collaboratively designing the first iteration of the online environment to support members in learning to practice online, through engaging with the environment. During this process some of the community's existing practices were transferred to the online environment, thus providing some initial online practices (see section 4.1).

The second stage, Implementation, supports the community members' deeper engagement within the online environment. The matrix strategies, at this stage, support further development of the online environment to provide additional value through community communications, contributions and collaboration opportunities. This gradual process of implementation affords additional functionality within the online environment, as some community members master the existing online practice. In this way the environment supports the learning of those community members whose participation in practice moved beyond being peripheral. Having engaged within the online environment as members of a BCoOP, the ALEC tutors found it easier to consider how the tools of this new practice might be used in their own teaching (see section 4.2).

The Sustain stage enables community members to become full practitioners within the online environment. The environment and the practice within it expand to encompass all the tasks of the online practice. The community of practice begins to be self-sustained in the online environment, with its own master(s) and a range of practitioner expertise. As ALEC community members further developed their online practice, the expanded design of the environment was able to provide examples of some of the mastery which had previously been lacking. Responsibility for the online environment was then undertaken by the members of the ALEC BCoOP.

The fourth and final stage, reflecting on the learning, is guided by the second instrument, the heuristic model. This investigation reveals the elements of LPP which were enabled by the environment, the means through which the community members were learning the online practice, the learning trajectories of the community members and the change and growth of the community. Identifying what is taking place through LPP can provide an understanding of where further support may be needed. The reflections can then be used to identify relevant strategies from the matrix to overcome any shortcomings identified. The reflection stage of the process for the ALEC BCoOP (see section 8.2) revealed a range of levels of learning taking place from tutors who were only able to participate marginally, to the full participation in practice of online classroom tutors.

The contribution of the two instruments is discussed further in the following chapter. That concluding chapter reviews the study as a whole, its contribution to theory and practice, and its implications, as well as presenting recommendations for future research.



## Chapter 9: Conclusions

... the goal of design-based research is to lay open and problematize the completed design and resultant implementation in a way that provides insight into the local dynamics. This involves not simply sharing the designed artefact, but providing rich descriptions of context, guiding and emerging theory, design features of the intervention, and the impact of those features on participation and learning. (Barab & Squire, 2004, p.8)

This concluding chapter considers the wider view of the research and its outcomes. The achievements of the research and the answers it has provided to the research questions are examined in this chapter. The significance and value of the research is discussed in terms of its contribution to both the research participants and the research field. This research is summarised after noting its limitations and making suggestions for future research.

This thesis began by asking the question ‘How can members learn from others within their community if none of the members have yet mastered the new practice?’ The new practice in this case was that of e-learning. The small organisation that was the context for this research had acquired open source technology to develop an online environment, but the members of its community of practice (CoP) did not have the expertise to incorporate e-learning into their professional practice through this environment. Through the blending of the community’s existing practice with their practice within the online environment, this became a blended community of online practice (BCoOP). This researcher worked with the CoP to enable informal professional development in e-learning to take place in through the online environment and this study has become one of the first in-depth case studies of the emergence of a BCoOP.

Design-based research with a selected community was conducted on a collaboratively developed intervention which consisted of an online environment into which the community blended its engagement and practice, and the process through which this was accomplished. The case study also describes the intervention’s impact on the learning and participation of the community’s members, particularly the situated learning which took place through legitimate peripheral participation. Analysis of the research findings produced two instruments that can be applied to support other communities aiming to blend an online learning environment into their practice to become a BCoOP.

### 9.1 Answering the research questions

The overarching research question that guided this design-based doctoral research was, **“How can an online environment for adult literacy educators support the development of e-learning for their learners?”**

This research revealed that the staged implementation of an online environment can support the development of e-learning by providing a space which enables a community to become a blended community and to develop its online practice. Informal work-based professional development in e-learning was provided for the adult literacy educators as they engaged in their new practice alongside

other, more experienced, members of their community. Explained in terms of Lave and Wenger's (1991) analytical viewpoint, the learning curriculum of the online practice was made available through members' legitimate peripheral participation in the practice of the community as it blended an online environment with existing practice. This began for the ALEC community in Phase One and Phase Two of the research where the online environment supported communications and the sharing of resources within the community (see chapter 4), and provided support for community members to develop mastery of some aspects of the online practice. An outcome of this fuller participation in the area of the online practice was the development of some tutors' mastery in using online technology, enabling them to incorporate it into their teaching practice. In Phase Three of the research the online environment provided online classroom spaces in which e-learning opportunities were made available to learners (see chapter 5). Importantly, the online environment was designed to allow the tutors with online classrooms to share and view each other's practice in both the staff resource and communication areas and in their online classrooms. These levels of access enabled legitimate peripheral participation to take place thus building capacity and enabling some tutors to develop e-learning for their learners. This provided possible learning trajectories that incorporated the tasks and skills leading to full participation in the online practice of this blended community.

The answers to the three guiding questions for the research help to provide a more detailed explanation.

### **How can an online environment be designed and implemented to support Adult Literacy Educators' professional development in the area of e-learning?**

The literature recommended an approach to professional development (PD) which involved a community of practice. These findings confirm that recommendation, and show that a supportive environment can be designed in collaboration with members of an existing community of practice. This research revealed several design characteristics that contribute to an environment which supports PD for e-learning. These included: designing a usable environment with simplicity; providing the facility for the development of connections within the community online; and having a flexible environment which the community can adapt to suit their changing needs. Designing an online environment which is relevant to the community's practice, and which affords the ability to learn from one another encouraged engagement in the informal professional development that this provided. A phased approach to implementing an online environment for a community, recommended in the literature, is also supported by this research. The design principles for this intervention are encapsulated in the matrix of strategies, and the stages in which they are implemented, described in detail in section 8.1 of this thesis.

### **What hindered the use of this online environment in supporting Adult Literacy Educators in the development of e-learning for their learners?**

Barriers that were highlighted through the literature included a perceived lack of available time, lack of access to an online environment, technical difficulties, and information overload for participants (Riverin

& Stacey, 2008), a lack of perceived need (Najafi & Clarke, 2008; P. Smith, et al., 2005), scarcity of masters (P. Smith, et al., 2005) and a lack of practical support (Najafi & Clarke, 2008). The perceived lack of time remained a barrier to some community members in this study, until the value of the new practice was recognised by community members. Support to develop levels of mastery was provided to mitigate the scarcity of masters in the use of online environments. Other barriers were overcome through the application of the strategies in the matrix including lack of perceived need, information overload, technical difficulties and lack of practical support, although some barriers remained.

This research confirmed that, as Handley et al. (2007) perceived, full participation in a CoP is not inevitable. The disruption due to earthquakes and the related damage (see chapter 6) further limited community members' access to computing facilities and the internet, and contributed to a lack of technology infrastructure and equipment. The earthquakes also contributed to the lack of energy and lack of time for tutors to engage in the online environment.

### **What conditions or strategies support the design and implementation of this online environment as a source of professional development in e-learning?**

Two conditions or strategies were of particular importance in supporting the community members' professional development in e-learning. (1) Situating the community in the context of the online practice, with e-learning tools available to the educators. (2) Providing, through collaborative design, an online environment that fulfilled the community's current needs and allowed for the future growth and development of their practice. A total of twenty eight strategies, to support both the design and implementation of this professional development intervention, were synthesised from this present research and from strategies recommended in the literature. These strategies and examples of their application were detailed in section 8.1 of this thesis.

## **9.2 The significance of the research, its value and contribution**

This research provides an example of relevant and timely professional development for e-learning which can be sustained by the educational community for which it was implemented. The contribution and significance of this study extends beyond the value which it has added to that single community.

As design-based research using both qualitative and quantitative data, research which considers sustainability and scalability, and a study which uses an existing delivery environment rather than developing an alternative, this research fulfils several criteria in Dede, Ketelhut, Whitehouse, Breit and McCloskey's (2009) research agenda for teacher professional development in an online environment. The literature reviewed in chapter two indicated a lack of investigative research on e-learning PD in contexts other than higher education. The context of the small organisation in this study was a community of adult literacy educators. This extended the range of contexts, and added to the small body of literature on professional development in this field. Few studies recorded in the literature

demonstrate organisational approaches which have taken place over a longer term or show more mature e-learning practice developing (Guiney, 2013), as this research does.

This research provides one of the first in-depth case studies of the evolution of a CoP into a sustained BCoOP. This community of educators occurred naturally and, as the literature suggests (Barab, et al., 2003b; Dempster, 2004; Hung & Nichani, 2002; Schlager & Fusco, 2003), it was supported by the online technology rather than designed through it, thus enabling the members to extend their practices through a staged process of development. Unlike many CoPs in the literature, this community's development was organic, rather than being managed or modified, as it blended the online environment into its practice.

The theoretical findings of the research have extended the theory underlying this design-based research, that of LPP within a CoP. This extension takes the form of two instruments, illustrated with examples from the case study. Communities which incorporated an online environment in their practice were not studied in the early research where LPP was introduced (Lave & Wenger, 1991, 2002; Wenger, 1998b), nor were blended communities or distributed communities of practice. The first instrument, a matrix of strategies, supports the design and implementation of an online environment for a sustainable BCoOP, and provides advice for others in enabling the development of blended communities to support professional development through LPP. The matrix provides design principles in the form of a range of strategies, and the recommended stages of development in which to initiate particular strategies. Although there were earlier frameworks and strategies in the literature, they were not adequate for the challenge of designing and implementing an environment which supports a sustainable BCoOP. This matrix of strategies is designed to be relevant to anyone supporting the development of a BCoOP.

This research has returned LPP theory to its original position as a heuristic (Lea, 2005) and a means of analysing learning (Lave, 2008), and has shown that it can be applied to provide a clear picture of the learning taking place within the online environment of a BCoOP. This study has also extended LPP theory by combining it with this research and elements of Wenger's (1998b) early theory, concerned with a single CoP and the individual members of that community, to produce the second instrument in the form of a heuristic model. This heuristic model can be used to guide the investigation of learning taking place through LPP in an online environment for a BCoOP. This instrument was valuable to the researcher in the final phase of this design-based research in guiding the evaluation of the PD intervention and its impact. Its use is recommended to designers, developers and/or researchers investigating the learning taking place through LPP in an online environment for a CoP.

Finally, Fuller et al. (2005) suggested that LPP may require amendments for contexts which include new elements. The new element in the ALEC context was similar to the case study of P. Smith et al. (2005), in that there was a shortage of masters in online practice, in a community which was trying to incorporate this new practice within their own. The staged intervention implemented in this research supported the development of masters within the ALEC community. This was accomplished by enabling LPP to take place within an online environment which provided some of that mastery and supported its gradual

development in community members, thus creating potential learning trajectories to mastery of a new practice.

### 9.3 Limitations and future research

As in any case study research the findings of a case study are limited to the context and to the evidence collected. The research was limited to the online environment. In addition, the quality of the e-learning which took place, and the content which was provided for the tutors' clients were not studied. The contribution of the researcher within this design-based research was considerable, and replication of this integral aspect of the study may not be possible. However, the application of theory within the design-based research does allow for some generalisation, and the design principles underlying the intervention are presented as well as its application in this specific context.

Two instruments were developed in this research and both are recommended for application in future research of the development of CoPs in online environments; both those that are entirely online and those that are blended, as in this study. The majority of the strategies arising from the research and included in the matrix were added in the focus areas of the Design stage of the Environment component, the Implementation stage of the Engagement component and the Sustain stage of the Stakeholders component. Further study of these areas in other community contexts would be particularly valuable. The heuristic model synthesised from LPP theory and the findings of this research can also be used to guide research into the learning taking place in other communities. In applying the heuristic model and evaluating the findings of an investigation, it will be important to consider the local context, its constituent elements, needs, barriers and expectations.

The ALEC BCoOP continues to support its members and future research could revisit the ALEC BCoOP, including expansion of the research questions to include teaching and learning. Investigating the standard of e-learning in the organisation and raising it through the support of the online environment could be a productive next step. Further iterations of this design-based research could collaboratively develop the intervention to build the capacity for high quality e-learning. For example, demonstration classrooms could be provided which contained specialist e-learning content for adult literacy educators, as well as advice of a pedagogical nature on incorporating e-learning in this educational context. In addition, if the context of the ALEC community changes, the heuristic model could be applied to re-evaluate the learning and how it is taking place. For example, at the close of data collection only the At-Base tutors were teaching their students in the online classrooms. If tutors from other areas of the organisation begin to teach using their online classrooms, further research on the changes to the community, and the curriculum which its practice provides, would give a broader insight into the operation of LPP in this context.

### 9.4 Conclusion

Guided by the indicators of effective professional development in the literature, this research implemented a professional development intervention which provided timely, flexible professional development for e-learning relevant for this community of practice of adult literacy educators which

was distributed across a range of workplaces and work hours. A sustained blended community of online practice (BCoOP) developed. The theoretical findings of this research extend the theory of LPP to include the context of a blended community within an online environment. The findings of this design-based research were further analysed to produce two instruments to support the design and development of an online environment for a BCoOP, and the investigation of the learning taking place within that environment.

ALEC tutors' professional development in e-learning was supported by the development of a blended community of online practice (BCoOP) through the addition of the online environment for the organization, and the application of the matrix of strategies. Through engagement with other stakeholders within the online environment, community members were provided with opportunities to develop their online practice. While face to face sessions initially introduced the community members to the ALEC online environment, ongoing professional development for their online practice took place informally, both face to face and online in this blended community, with the support of the environment and the stakeholders' engagement within it.

The design and implementation of this intervention was a process which took place, in collaboration with the members of the organisation, through four iterative cycles of design-based research. The research participants' professional development was also a process, as they followed the learning curriculum in the form of the community's growing practice online. That process of learning continues to take place, through the support of this online environment, more than two years after the researcher/developer withdrew from the field of study.

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# Appendices

## Appendix A: Moodle and ALEC Moodle site terminology

Moodle 1.9 terminology	Definition
Site	An installation of Moodle which requires a login by participants
Category	A group of courses
Course	A discrete element of a Moodle site which contains its own file system for content which may be displayed by adding links on to sections of the course
Section	A page-like element of a course on which text and visual content can be displayed and links to resources and activities can added
Administrator role	A participant enrolled in the site in this role can control or change anything in the whole site
Teacher role	A participant enrolled in a course in this role can control or change anything in that course
Student role	A participant enrolled in a course in this role can see any course content made visible to them, download files and engage in activities, such as forums, made available to them

ALEC site terminology	Definition
Area	A category or course which has been set aside for a particular purpose or set of participants
Space	A section which has been set aside for a particular purpose or set of participants
Online classroom (OC)	A Moodle course developed for teaching clients
ALEC administrator role	A participant given this role can create new users for the site and add them to some courses and categories
Colleague role	The Colleague role allows users to view but not participate. This role allows a colleague to view all the content of the course even if it is hidden, so that they can learn from what the teacher in the course has chosen to do. They are able to see reports, gradebook, hidden content, and to view activities such as chat recordings, choice, quiz, feedback, assignments, databases, scorms and surveys for all groups. By default this role does not receive any emails from the course forums. (Colleagues are added as a hidden role so that clients are unaware of them.)

## Appendix B: Phase One coding template

Theme	Category	Code
Design Elements	Elements of the site design which relate to participant <u>engagement</u>	E
	<u>Accessibility</u> and user friendliness of the site design to participants	DA
	The <u>tools</u> made available within the site and their use	T
	The <u>content</u> of the site	C
	The <u>potential</u> of the site	P
Community of Practice	The development of an <u>CoP</u> in the online environment	CP
	Participants taking up <u>leadership</u> roles in any context within the <u>QCoP</u>	L
	Community <u>ownership</u> of the environment	O
	The <u>sharing of practice</u> within the site	S
	<u>Barriers</u> to participation	B
Legitimate Peripheral Participation	Participants developing an active <u>role or identity</u> within the <u>QCoP</u>	R
	Participation legitimised by being <u>valued</u>	V
	<u>Initial engagement</u> of participants within the online environment and the <u>QCoP</u>	IE
	Participants taking part in the <u>deeper practice</u> within the online environment	DP
	<u>Access</u> to other members' activities within the site to enable development from 'newcomer' towards 'mastery'	A

Code	Category descriptions	Examples
E	<u>Participant engagement</u> includes: <ul style="list-style-type: none"> <li>aesthetics of site</li> <li>relevance of site to participants</li> <li>support in participating</li> </ul>	It needs to be prettier. If I have too much white space and just words, I tend to just switch off a bit. People will buy into it better if there's a purpose. I can do anything as long as I have your printouts on how to do things.
DA	<u>Accessibility of site</u> includes: <ul style="list-style-type: none"> <li>site navigation</li> <li>overall organisation of site</li> <li>ease of use,</li> <li>levels of access and permissions</li> </ul>	Sometimes I click on the wrong button. It's so useful and a simple design that it's a pleasure to use Putting it onto Moodle's not a big deal. -
T	<u>Tools and their use within the site</u> includes: <ul style="list-style-type: none"> <li>forums</li> <li>communication</li> <li>collaboration</li> </ul>	Someone writes something up, it goes into your email – that works well for me. Wikis are available on there, so that's another possibility.
C	<u>Site Content</u> includes:accessibility of content <ul style="list-style-type: none"> <li>relevance of content to participants</li> <li>ownership of content</li> </ul>	But I can see myself it's been massively useful. I use it just about every day. I'll use something relevant to me, but I haven't quite seen the relevance yet.
P	<u>Site Potential</u> includes: <ul style="list-style-type: none"> <li>flexibility of site use</li> <li>ability to meeting the CoPs changing needs</li> <li>suggestions for future developments</li> </ul>	It's just up to people to use it creatively as they move through their work and I'm sure there'll be numerous uses that come out of that. having on Moodle an index, sort of like what resources are in that room
CP	<u>OCOP Development</u> includes: <ul style="list-style-type: none"> <li>sense of community</li> <li>changes from extant community behaviour</li> </ul>	this is making it a more public forum for people to see each other's ideas and become more of a group that way. -
L	<u>Online Community leadership roles</u> includes: <ul style="list-style-type: none"> <li>mandating site behaviour</li> <li>taking on some community responsibility</li> </ul>	I think one of the things that have made people really get into Moodle is ... I think it has to come from the top. <u>my commitment is to try and go in every day,</u>
O	<u>Community ownership</u> includes: <ul style="list-style-type: none"> <li>sense that the space belongs to them</li> <li>willingness to customise to suit their purposes</li> </ul>	That's why Moodle would probably be one space ... the one place where everyone can access and communicate simultaneously. The other thing would be just to have like the staff on there.
S	<u>Shared practice within the OCoP</u> includes: <ul style="list-style-type: none"> <li>shared educational passion or professional concern</li> <li>open discussion of professional practice</li> </ul>	-



	<ul style="list-style-type: none"> <li>• sharing on online practice and skills through interaction</li> </ul>	- -
B	<u>Barriers to participation in the OCoP</u> include: <ul style="list-style-type: none"> <li>• Time constraints</li> <li>• lack of internet connection</li> <li>• lack of computer access</li> </ul>	<p>You're so busy, that this is another job almost. We can't just download it because we haven't got access. <i>communityvenue</i> don't even have a phone.</p>
R	<u>OCoP role or identity development</u> includes: <ul style="list-style-type: none"> <li>• taking responsibility for an aspect of the site</li> <li>• online presence</li> </ul>	I could go in and put in when the community meetings are and the workplace.
V	<u>Participation legitimise by being valued</u> includes: <ul style="list-style-type: none"> <li>• time allocated for participation</li> <li>• acknowledgement of participation</li> <li>• rewards</li> </ul>	<p>If we had maybe 20 minutes or something each week, built into our time. someone's put one up today , or yesterday, and I will go back and sort of reinforced that. a couple of people replied, I based the decision on those two people.</p>
IE	<u>Initial engagement</u> includes: <ul style="list-style-type: none"> <li>• lurking,</li> <li>• reading newsletters</li> <li>• viewing or downloading resources</li> </ul>	<p>I mean I've gone on there just to have a wee squizz - a wee look around even if I haven't wanted anything in particular. I haven't accessed it much at all except to read the newsletters I've accessed it from home to look at unit standards and things like that</p>
DP	<u>Deeper practice</u> includes: <ul style="list-style-type: none"> <li>• posting in forum</li> <li>• adding resources</li> <li>• developing a Moodle space</li> </ul>	<p>I put a request in for something, but then I wanted to update my request I get all the units up on Moodle I think that's when I tried to rearrange the files</p>
A	<u>Access to other members' online activities</u> includes: <ul style="list-style-type: none"> <li>• different levels of access to online activities</li> <li>• awareness of the online practices of others</li> <li>• sharing of online practice and skills through observation</li> </ul>	<p>- - Another tutor can whip into that and say, 'oh that's what I want to do this term', so I'll just download what she's got.</p>

## Appendix C: Phase Three coding template

Theme	Category	Code
Environment	<u>Access &amp; Legitimacy</u> as legitimate access to the full range of activities needed to master the practice	AL
	<u>Peripherality</u> as a way of gaining access to resources and understanding	Pe
	<u>Transparency</u> as the cultural organisation of access	TR
	<u>Artefacts</u> as connection with the history and culture of the practice the technology of practice	A
	<u>Connections</u> as a set of relations among persons, activity, and the world, over time	C
Engagement	<u>Relations</u> as acceptance by and interaction with other practitioners	R
	<u>Tasks</u> as participation in work that increase in complexity and scope	Ts
	<u>Practice</u> as a situated learning activity (activity focus)	P
	<u>Participation</u> as engaging in the existing practice; to understand it, to participate in it, and to become full members of its community (community focus)	Pa
Stakeholders	<u>Learning</u> as a curriculum in opportunities for engagement in practice through centripetal participation in the learning curriculum of the ambient community	L
	<u>Identity</u> as long term, living relationships between persons and their place and participation in communities of practice Including learning how to talk (TI) in the manner of full participants	I
	<u>Growth</u> (CoP cycles) as the process of community reproduction	G
	<u>Change &amp; continuity</u> as the practice itself is in motion	CC

Environment		
Code	Category descriptions	Examples
AL	<u>Access &amp; Legitimacy</u> includes: <ul style="list-style-type: none"> <li>○ legitimate access to the full wide range of ongoing activities for mastery</li> <li>○ to old-timers, and other members of the community</li> <li>○ access to practice as resource for learning, not instruction</li> <li>○ access to information or resources</li> <li>○ access to opportunities for participation (engagement)</li> </ul>	Access to Tutors Only, limited access to Classrooms "... have been encouraging people to use the Moodle as a primary way of communicating" "I've been looking more at what Annie is doing" Access to "Resources and help documentation Forums, wikis, own classrooms
Pe	<u>Peripherality</u> includes: <ul style="list-style-type: none"> <li>○ a way of gaining access to resources and understanding</li> <li>○ offers examples including masters, finished products, and more advanced apprentices</li> <li>○ peripherality requires less <i>demanding tasks</i> than full participants</li> <li>○ extended legitimate peripherality provides opportunities to make the culture of practice their own</li> </ul>	"She will put things up and we can take them" "If I'd looked at the Demo classrooms more... I've been looking more at what Annie is doing" "I'd started with a little bit" "Followed her lead for a while...finding my own resources now"
TR	<u>Transparency</u> includes: <ul style="list-style-type: none"> <li>○ the cultural organisation of access</li> <li>○ clear <i>learning processes</i> and use of artefacts</li> <li>○ invisible technology = visible subject matter, visible technology = visible use</li> <li>○ <i>a way of organising activities that make their meaning visible</i></li> </ul>	"It's like living in a glasshouse" How to use the artifacts, George & Belinda looking at Annie's stuff How to structure a site "It showed people what Moodle was, what it could do"
A	<u>Artefacts</u> include: <ul style="list-style-type: none"> <li>○ the technology of practice               <ul style="list-style-type: none"> <li>○ Resources – tools of the e-learning trade</li> <li>○ Support – docs and demos</li> <li>○ Workspaces</li> </ul> </li> <li>○ more direct participation in the cultural life</li> <li>○ <i>connection with the history of the practice</i></li> </ul>	The tools people chose to use, the resources they share  Tutors Only Forum posts, Brag book. <i>Very short history – it's still developing</i>
C	<u>Connections</u> includes: <ul style="list-style-type: none"> <li>○ relations among persons, activity, and the world, over time</li> <li>○ the social structure of this practice, its power relations</li> <li>○ the richness of its interconnections</li> <li>○ <i>tangential and overlapping communities of practice.</i></li> </ul>	More connections between groups Began by following the ALEC structure Use forum diagrams to show them <i>Only in my CoP diagram</i>

Engagement V3		
Code	Category descriptions	Examples
R	<u>Relations</u> includes: <ul style="list-style-type: none"> <li>the circulation of knowledge among peers and near-peers</li> <li>acceptance by and interaction with acknowledged adept practitioners</li> </ul>	<p>“She said no, you right click”</p> <p>“She’s sort of in a mentoring kind of role”</p>
Ts	<u>Tasks</u> include: <ul style="list-style-type: none"> <li>work that increases in complexity and scope</li> <li>partial participation, in work that increase in complexity and scope (community level tasks)</li> <li>peripheral tasks take less time, effort, responsibility and newcomer's tasks are, short, simple, less vital, <i>but still useful</i></li> <li>tasks gain increasing value in practice with increased skill</li> </ul>	<p>0. Lurking 1. Reading forum post 2. Downloading files 3. Adding posts 4. Sharing resource 5. Adding wiki comment 6. Linking sites 7. Uploading and linking files 8. Using labels and organizing sections 9. Using forums 10. More complex activities</p> <p>Levels 0-3</p> <p>Levels 4-6</p> <p>“That started becoming useful in my classroom, not just another thing”</p>
P	<u>Practice</u> includes: <ul style="list-style-type: none"> <li>situated learning activity</li> <li>centripetal movement towards mature practice.</li> <li>growing use, value of participation (to whom?)</li> </ul>	<p>The activity is their actual teaching practice</p> <p>“I’d like to expand on it more for my students”</p> <p>“There’s a tipping point” (George)</p>
Pa	<u>Participation</u> includes: <ul style="list-style-type: none"> <li>engagement in social practice that entails learning as an integral constituent</li> <li>knowing as activity by specific people in specific circumstances</li> <li>the provision of an immediate ground for self-evaluation, and understanding of how well or poorly one's efforts to contribute are evident in practice</li> </ul>	<p>Other tutors’ online classroom teaching</p> <p>“how far ahead and how far behind I am”</p> <p>“My own sites are a little half baked”</p> <p>Looking at and discussing with others how they’ve set theirs up</p>

Stakeholders:		
Code	Category descriptions	Examples
L	<u>Learning includes:</u> <ul style="list-style-type: none"> <li>○ a curriculum in opportunities for engagement in practice</li> <li>○ centripetal participation in the learning curriculum of the ambient community – learning trajectory</li> <li>○ no intentional instruction very little observable teaching</li> <li>○ takes place whether or not there is any intentional educational form at all</li> </ul>	<p>More permissions and access with increasing expertise</p> <p>“The feeling that you’re halfway to a really excellent project, and if you just put a little bit more work in...”</p> <p>“If I got stuck I’d ask the others”</p> <p>“The way that she approached it’s been a real inspiration to me”</p>
I	<u>Identity includes:</u> <ul style="list-style-type: none"> <li>○ long term, living relationships between the person and their place and participation the communities of practice</li> <li>○ the construction of identity - becoming a different person with respect to the possibilities in practice</li> <li>○ learning how to talk (and be silent) in the manner of full participants</li> <li>○ talking within (e.g., exchanging information necessary to the progress of ongoing activity)</li> <li>○ talking about (e.g., stories, community lore)</li> </ul>	<p>“I used to get anxious but now I just keep trying”</p> <p>“Each resource on Moodle is linked to their abilities”</p> <p>“Copy and paste off the website to link to a file off it”</p> <p>Stories about how students did well</p>
G	<u>Growth (CoP cycles) includes:</u> <ul style="list-style-type: none"> <li>○ the process of community reproduction</li> <li>○ artefacts -- physical, linguistic, and symbolic</li> <li>○ the political and social organisation</li> </ul>	<p>Training and turnover</p> <p>Available artifacts increase in number</p> <p>Leadership and turnover</p>
CC	<u>Change &amp; continuity</u> as the practice itself is in motion <ul style="list-style-type: none"> <li>○ newcomers begin to establish their own identity and the practice’s future.</li> <li>○ newcomers with new viewpoints introduce tension new perspectives</li> <li>○ everyone can to some degree be considered a "newcomer"</li> </ul>	<p>“I saw what I’d do differently”</p> <p>“It might suit her learners, but it would not suit mine.”</p> <p>Annie wanting her own training session to learn new elements</p>

## Appendix D: Ethical approval Phase One

Ref: 2010/35/ERHEC

9 June 2010

Susan Tull  
School of Literacies & Arts in Education  
College of Education  
UNIVERSITY OF CANTERBURY

Dear Susan

Thank you for providing the revised documents in support of your application to the Educational Research Human Ethics Committee. I am very pleased to inform you that your research proposal “A model of e-learning professional development with an online community of practice for adult literacy educators” has been granted ethical approval.

Please note that should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval please let me know.

We wish you well for your research.

Yours sincerely

Dr Mere Skerrett and Nicola Surtees

***Co-Chairs***

***Educational Research HEC***

## Appendix E: Ethical approval Phase Two meso-cycle one

Ref: 2010/70/ERHEC

11 October 2010

Susan Tull  
School of Literacies & Arts in Education  
College of Education  
UNIVERSITY OF CANTERBURY

Dear Susan

Thank you for providing the revised documents in support of your application to the Educational Research Human Ethics Committee. I am very pleased to inform you that your research proposal “E-learning professional development within an online community of practice for adult literacy educators” has been granted ethical approval.

Please note that should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval please let me know.

We wish you well for your research.

Yours sincerely

Nicola Surtees

**Chair**

**Educational Research HEC**

*“Please note that Ethical Approval relates only to the ethical elements of the relationship between the researcher, research participants and other stakeholders. The granting of approval or clearance by the Educational Research Human Ethics Committee should not be interpreted as comment on the methodology, legality, value or any other matters relating to this research.”*



## Appendix F: Ethical approval Phase Two meso-cycle two and Phase Three



### HUMAN ETHICS COMMITTEE

Secretary, Lynda Griffioen  
Email: [human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)

Ref: 2011/05/ERHEC

30 March 2011

Susan Tull  
School of Literacies & Arts in Education  
College of Education  
UNIVERSITY OF CANTERBURY

Dear Susan

The College of Educational Research Human Ethics Committee is pleased to inform you that your research proposal "E-learning professional development within an online community of practice for adult literacy educators" has been granted ethical approval. The committee would like to commend you on your application which was very thorough and well considered.

However, this approval is subject to the provision of the following:

- In the information letter to participants, second paragraph, please add a sentence or two that elaborates on the specific aspects of their online interactions that will constitute data for the study.
- In both information letters, reference is made to the third stage of the study. Please very briefly outline the first two stages of the study so that the participants can see how the third stage, that they will be contributing towards, fits with the previous stages.

If you have any questions regarding the above comments please don't hesitate to contact me.

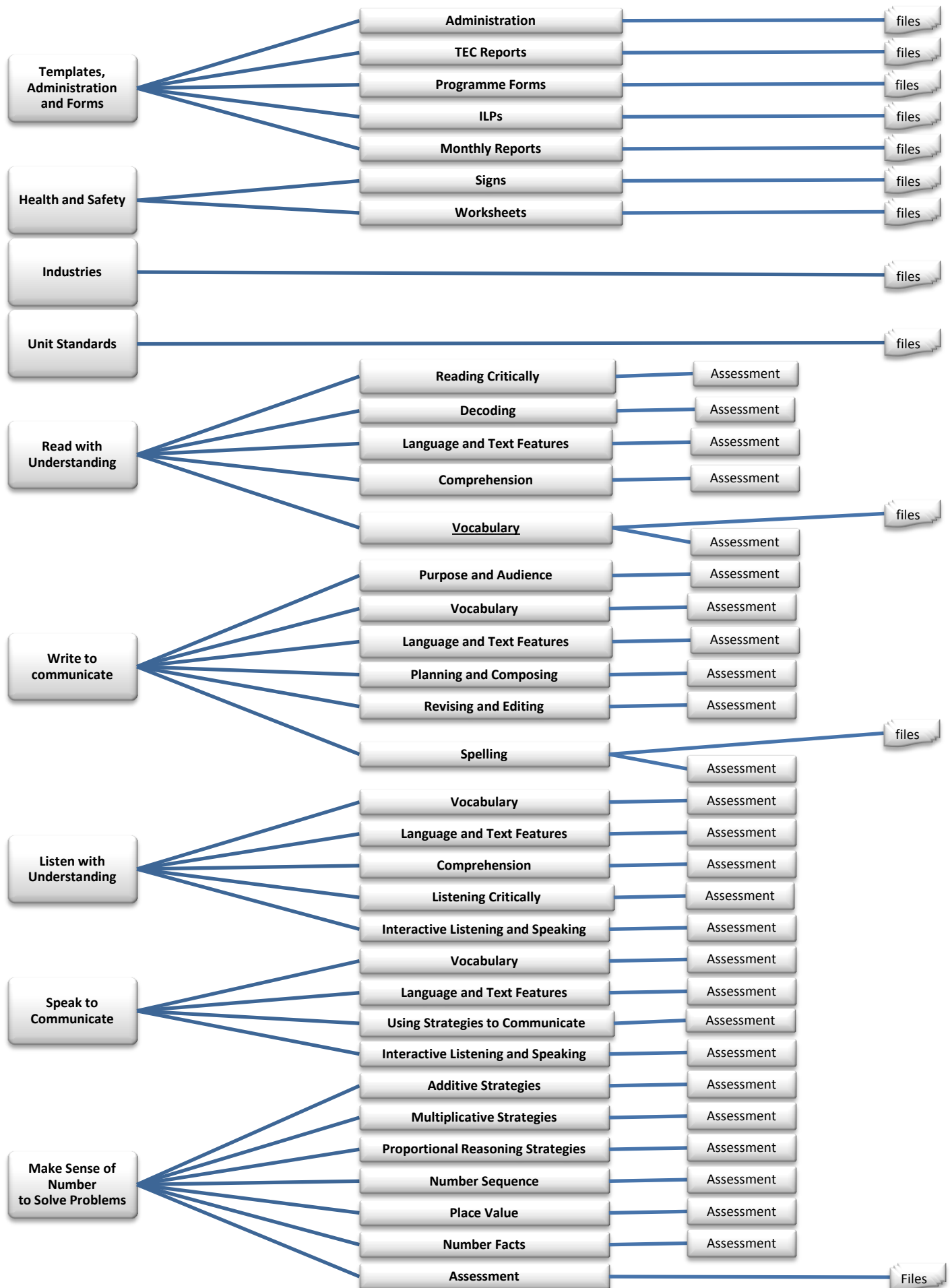
We apologise for the delay in our response to you and wish you well for your project.

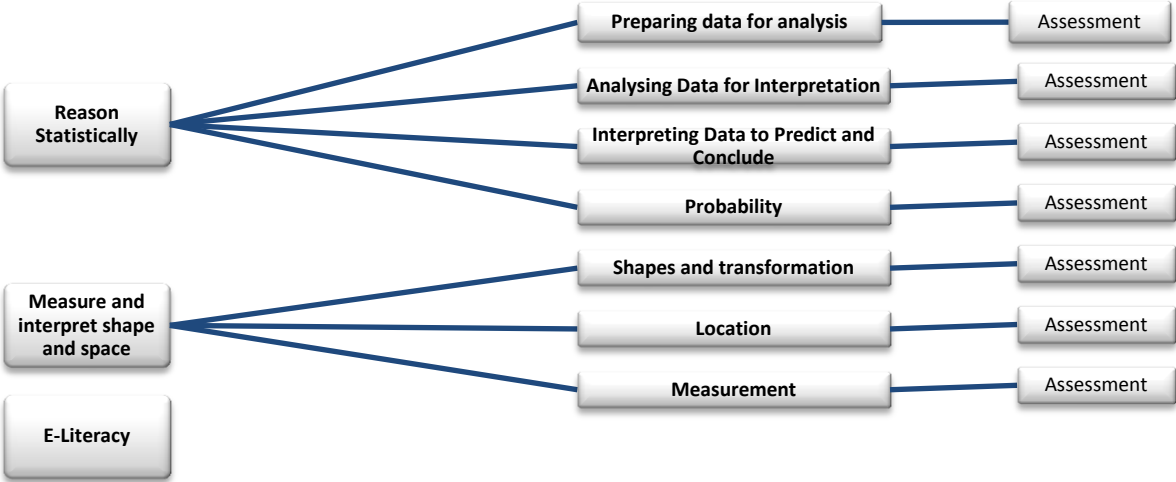
Yours sincerely

pp 

Nicola Surtees  
**Chair**  
**Educational Research Human Ethics Committee**

## Appendix G: The 'First Class' resource folder system





The First Class resource folder system showing the three nested levels of folders.

The only folders which contained any files were the 12 folders which show a fourth level named 'files'

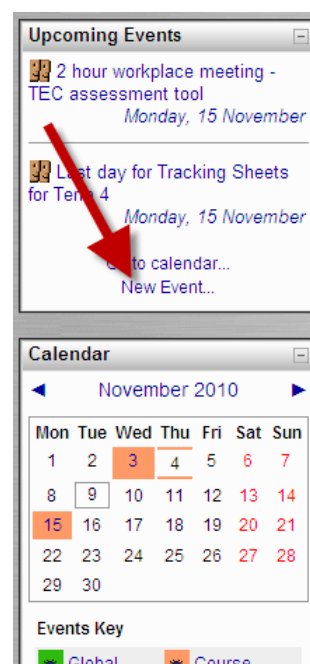
## Appendix H: Support documentation example

### How to add an event to the calendar

- 1) Click on “New Event” on the ‘Upcoming Events’ block.
- 2) Choose “Course Event” and click “OK”

**Type of event:**

☐ User event  
☐ Group event for group ▼  
☒ Course event  
☐ Site event



- 3) Fill in the details of the event in the next screen and then click “Save changes”

**New Event (Course event)**

Name:

Description: 

Trebuchet 3 (12 pt) Normal Lang B I S x<sub>2</sub> x<sup>2</sup>

A very special holiday

Path:

Date:    Time

Duration:
 ☒ Without duration  
☐ Until    Time    
☐ Duration in minutes

Repeats:
 ☒ No repeats  
☐ Repeat weekly, creating altogether  events

... and you're finished 😊

## Appendix I: The incorporation of elements of Stuckey's (2004) framework into the matrix of strategies

In the table below each of the elements of Stuckey's (2004) framework are responded to in italics either with an explanation of why they were not included in the matrix of strategies, or the strategy which was drawn from them.

- Elements in black have been crossed out because they were not included in the matrix of strategies.
- Elements in green were included in the **Environment** component of the matrix of strategies
- Elements in blue were included in the **Engagement** component of the matrix of strategies
- Elements in red were included in the **Stakeholders** component of the matrix of strategies
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Design	Implement	Sustain
<ul style="list-style-type: none"> <li>• <b>Situatedness</b></li> <li>** <i>Situate the community in the practice</i></li> <li><del>• Concentrate on communities that matter</del></li> <li><i>Only one community</i></li> <li><del>• Define and articulate your purpose</del></li> <li><i>Organic community defines its own purpose</i></li> </ul>	<ul style="list-style-type: none"> <li><del>• Reinforce the community's focus</del></li> <li><i>Organic community provides own focus and reinforcement</i></li> <li>• <b>Focus on value</b></li> <li>** <i>Highlight the value added</i></li> </ul>	<ul style="list-style-type: none"> <li><del>• Focus on topics important to the business and community members</del></li> <li><i>Organic community provides own focus</i></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Design for a range of roles</b></li> <li>* <i>Design for a range of roles</i></li> <li><del>• Get key thought leaders involved.</del></li> <li><i>All community members are involved at some level</i></li> <li><del>• Create Executive awareness</del></li> <li><i>All community members are involved at some level</i></li> <li>• <b>Make sure people have time and encouragement to participate</b></li> <li>* <i>Make sure people have time and encouragement to participate</i></li> <li>• <b>Collect and use feedback from members</b></li> <li>* <i>Collect and use feedback from members</i></li> </ul>	<ul style="list-style-type: none"> <li><del>• Find a well respected community member to coordinate the community</del></li> <li><i>Community not formally managed or coordinated</i></li> <li><del>• Create meaningful and evolving member profiles history and context</del></li> <li><i>Data suggests that this was not wanted. Community members already known to each other.</i></li> <li>• <b>Develop an active passionate core group</b></li> <li>** <i>Support an active passionate core group</i></li> <li><del>• Develop a strong leadership program</del></li> <li><i>Community not formally managed or led</i></li> <li>• <b>Acknowledge the voluntary nature of participation</b></li> <li>* <i>Acknowledge the voluntary nature of participation</i></li> </ul>	<ul style="list-style-type: none"> <li><del>• Harness the power of a personal connection</del></li> <li><i>Community not formally managed. Personal connections not utilised</i></li> <li><del>• Play on all motives for participation</del></li> <li><i>Community not formally managed, participation not manipulated</i></li> <li>• <b>Build personal relationships among community members</b></li> <li>** <i>Enable the development of relations</i></li> <li><del>• Don't be too strict in judging</del></li> <li><i>Community not formally managed. Judgement was a personal matter</i></li> </ul>

<ul style="list-style-type: none"> <li>• <del>Develop interdependency</del> <i>Community not formally managed</i></li> <li>• <del>Create a rhythm</del> <i>Community not formally managed</i></li> <li>• Integrate the rituals of community life ** <i>Integrate the existing rituals of community life</i> ** <i>Create appropriate new rituals</i></li> <li>• <del>Combine familiarity and excitement</del> <i>Data indicated a preference for ***Design with simplicity rather than excitement</i></li> <li>• <del>Keep it fresh (first in community)</del> <i>Always in community</i></li> </ul>	<ul style="list-style-type: none"> <li>• Invite different levels of participation ** <i>Allow different levels of participation</i></li> <li>• <del>Create critical mass of functionality</del> <i>Community not formally managed</i></li> <li>• Provide the materials that collaboration requires ** <i>Provide the means for collaboration to take place</i></li> <li>• Make it easy to contribute and access * <i>Make it easy to contribute</i></li> <li>• <del>Rely on the fun factor</del> <i>Community creates own fun when they feel it is appropriate</i></li> </ul>	<ul style="list-style-type: none"> <li>• <del>Actively generate content</del> <i>Community generates own appropriate content</i></li> <li>• <del>Prime the pump with communication</del> <i>Community not formally managed.</i></li> <li>• Encourage appropriate etiquette * <i>Encourage appropriate etiquette</i></li> <li>• <del>Create dialogue about cutting edge issues.</del> <i>Community not formally managed, dialogue not intentionally created</i></li> </ul>
<ul style="list-style-type: none"> <li>• <del>Form communities around people, not applications</del> <i>Community already exists</i></li> <li>• Create forums for thinking together as well as systems for sharing information * <i>Create forums for thinking together as well as systems for sharing information and resources</i></li> <li>• Design for evolution (flexible, extensible) * <i>Design for evolution (flexible, extensible)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Fit the tools to the community * <i>Fit the tools to the community</i></li> <li>• Develop both public and private spaces ** <i>Develop both whole community and small group spaces</i></li> <li>• <del>Open a dialogue between inside and outside</del> <i>Dialogue outside the community not a focus in this space</i></li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate member-run subgroups ** <i>Enable members to run subgroups</i></li> </ul>